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I.

A CONTRIBUTION TO THE PATHOLOGIC HISTOL-  
OGY OF HYPERKERATOSIS LINGUALIS.  
(HAIRY TONGUE.)\*

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The condition, commonly known as hairy tongue, has been the subject of much clinical description, and recently, also, of considerable bacteriologic study. No account of its pathologic histology has, however, to my knowledge, been published, except what could be obtained from an examination of the filamentous processes removed by scraping the surface of the tongue.

The affection has been generally regarded as a hyperkeratosis of the filiform papillae of the tongue and distinct from the so-called black tongue or *nigrities linguae mucorina*, a condition in which the blackening is due to the presence of a hyphomycetous fungus.

The special exciting cause is, as yet, unknown. Syphilis, the abuse of tobacco and alcohol, have been present in some cases, but with no constant regularity. By some

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writers it is thought to be due to the direct irritation of a special bacterium or fungus. Bacteriologic examinations have shown numerous micro-organisms to be present in the mass of hair-like processes and a mucor, bearing black sporangia, has been isolated, which, by some, has been claimed to be the specific parasite. Inoculation experiments have, however, been unsuccessful.

Two cases of hairy tongue, which have come under my observation, have allowed me to excise considerable portions of tissues for microscopic examination. Six specimens in all were obtained, which showed, except in minor details, similar histologic appearances.

### CLINICAL HISTORY.

CASE I. Male, 50, first came to the clinic with mucous patches on both sides of the tongue, which otherwise presented nothing abnormal, the filiform papillae being well developed, but not excessively so. The patient was given mercury and iodid of potassium, internally, for a month. At the end of this time, the mucous patches had disappeared, and iodid of potassium was administered alone. Two months later, he came again stating that for the previous six weeks he had noticed a brownish discoloration of the dorsum of the tongue, gradually increasing in intensity, and becoming associated with a burning or stinging sensation along both sides of the organ.

Examination showed the whole of the dorsum, except in the region of the tip, to be covered with blackish, elongated filiform papillae matted together, with a brownish tinge anteriorly, and a greenish one posteriorly. The longest of the papillae were about one and a half centimeters in length, these being in the central and posterior portions of the affected area. From this point the papillae gradually diminished in size, as the tip of the tongue was approached, in which region they presented nothing abnormal.

On scraping, the elongated papillae could be readily removed, leaving a surface of essentially normal appearance. In the posterior and central portions of the affected area, there is seen, after the removal of the papillae, a rounded elevated plateau with an even, flat top, about two

centimeters in transverse diameter, raised half a centimeter above the surrounding level, firm, slightly elastic in consistency, of the color and appearance of the surrounding normal epithelium.

The base and sides of the tongue show numerous large tortuous veins. A section was taken from the affected area a short distance in front of the elevated plateau above mentioned. Two other sections were subsequently removed in the immediate neighborhood.

CASE II. Male, 65 years of age. No history nor evidence of venereal disease. Moderate user of tobacco and light alcoholic liquors. Always in good health. Five years ago, for the first time, his attention was attracted to his tongue by the sensation of a foreign body near the base. Inspection then showed a blackish mat of hairs of about the same degree of development as at the present time. The hairs were scraped off by a physician, but grew again, reaching their former size in four or five months. The mat of hairs has been scraped two or three times a year since that time. The patient has had no discomfort from the hairs, except when they have grown long, the symptoms then consisting of the sensation as of a foreign body in the mouth, with a disagreeable taste. At the time of my examination of the tongue there was present on the dorsum a conspicuous triangular area, extending from the center backward to the region of the circumvallate papillae, the apex directed forward, the area exhibiting a blackish mass of compactly-matted hair-like structures lying flat upon the dorsum. The "hairs," on being lifted with the probe, were seen to have a length of two to three centimeters. On spreading apart the mass, there was seen in the posterior portion of the affected area a plateau-like elevation of the dorsum of the tongue, like a broad, flat wart, from two to three centimeters in diameter, raised about three or four millimeters above the surrounding level, with a rough surface, firm and unyielding to the touch.

Elsewhere on the dorsum the filiform papillae were unusually long, being from one to two millimeters in length.

In both of the preceding cases the closely matted condition of the long filaments over the elevated area above referred to made their removal necessary before specimens

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of the underlying tissue could be excised. The filaments came away readily in coherent masses on gentle curetting. They were then floated in water, arranged in as nearly a natural and mutually parallel manner as possible, subsequently dehydrated in alcohol, and finally imbedded in paraffin. After this clearing away of the surface of the tongue had been accomplished, specimens from the elevated area were excised and fixed in Zenker's fluid.

The specimens of tissue from the anterior portion of the filament-bearing area were removed with the filaments still adhering, which could be done with only moderate difficulty, as these were neither so long nor so closely packed as on the surface of the elevated area.

**PATHOLOGIC HISTOLOGY.** The description of the histologic appearances in the sections is facilitated by proceeding from below upwards.

The muscular and submucous tissues are apparently normal.

The corium is, as a whole, increased to from two to three times its natural thickness, this increase being particularly due to a lengthening of the papillae. As the papillae exhibit no corresponding lateral enlargement, they present the appearance of slender cones, mostly pointed, a few only being somewhat rounded. This lengthening is due to an increase in the number of the component tissue cells of the corium, which show no individual abnormality. In the upper portions of the papillae a moderately pronounced cellular infiltration is apparent, evenly distributed immediately below the inferior margin of the rete mucosa, not penetrating the latter, showing no tendency to aggregation into groups, gradually diminishing inferiorly and ceasing at about the upper third of the corium.

The cells composing this infiltration are almost wholly small round mononuclear, having the character of small lymphocytes. A few plasma cells and polynuclear, fine-granular neutrophils are found here and there, but no eosinophiles are met with.

Corresponding to the space between the conical papillae of the corium, the interpapillary processes of the rete



mucosa are seen to extend downward as conical prolongation with generally pointed tips.

The cells forming the basement layer of the rete mucosa are essentially normal in appearance, being columnar in outline with a large vesicular nucleus.

In the prickle-cells, immediately above the basement layer, alterations are observable, which become progressively more marked with each succeeding cell-layer. The first changes noted consist in the appearance of irregular vacuoles in the protoplasm of the cells, associated with a distortion and shrinking of the nuclei. As shown best by picric acid, these vacuoles are actual deficiencies in the protoplasm, due to a reticulation of the latter, which appears as a distinct network with delicate strands and meshes of varying size. The chromatin of the shrunken and distorted nucleus is collected into a few irregular, deeply-staining fragments.

As one proceeds upward from the lower layers of prickle-cells, the changes just described become in the superpapillary regions rapidly more pronounced, while in the interpapillary regions they are slowly and irregularly shown, many cells in the latter situation being but slightly altered from the normal. At a point ranging to from four to ten cell-layers above the basement layer, the nuclei of the cells begin to exhibit fragmentation and freeing of their chromatin as irregular, deeply-staining masses of varying size, while the protoplasm simultaneously exhibits larger vacuoles, from the disappearance of a certain number of the reticular strands. With these changes is associated the appearance of rounded granules of varying size in the vacuoles and along the cell-wall, having the staining properties of the original protoplasm of the cell. The cell-walls are well defined and distinctly thicker than normal, while the cells themselves appear more compactly joined.

To recapitulate in brief, the cells in this region exhibit a thickened wall, staining deeply with picric acid, eosin, and acid fuchsin; the originally homogeneous protoplasm shows a collection into threads and granules, staining, though less deeply than the wall, with picric acid, eosin, and acid fuchsin; the nucleus shows a fragmentation, its

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chromatin particles staining with methylene blue, acid fuchsin and hematoxylin; with Unna's stain for keratohyalin, the chromatin fragments stain with moderate intensity.

In the squamous layer of epithelium, the cells occupying the superpapillary regions, show generally no indication of a nucleus, but are filled with granules and masses of basophilic and acidophilic reaction, the former predominating. The arrangement of these granules corresponds to the shape of the cell, so that they appear as more or less parallel rows and lines. The superpapillary epithelium is on its free surface, prolonged upward to form slender acuminate processes, composed of squamous cells, containing the characteristic granules just described, which are now arranged in a linear manner. From the summit of these processes, long slender filaments are given off. These are the macroscopically visible "hairs" and will be described below.

The horny layer of epithelium extends from the interpapillary region upward along the margins of the acuminate processes into the filaments. Sections stained with acid fuchsin and picric acid show that the characteristic keratin stain first appears in the interpapillary region of the epithelium as an irregularly outlined inverted cone, of which the base forms the interpapillary epithelial surface. From the base of the cone the keratin stain runs upward along the margins of the acuminate processes as a sharply defined broad band.

Examination of this interpapillary keratin cone shows that the keratin first appears at a distance of ten to fifteen cell layers below the surface as a light-red wash evenly laid over both protoplasm and cell wall. Its appearance and the intensity of its development have no relation to the basophilic granules previously described, for it is at times found in cells, whose nuclei although flattened or shrunken show no dispersion of their chromatin, while other cells in the immediate neighborhood, with free lying fragments of chromatin, do not exhibit the keratin reaction. Along the margins of the acuminate processes, the keratin stain is evenly laid over both the walls of the flattened cells and their interior lines of granules which stain more deeply red,

and are thus recognizable where the keratin overlay is not too intense. With Unna's stain for keratohyalin (of hematoxylin followed by potassium permanganate) the keratin band does not stain, although, as previously stated, the basophilic granules are stained with moderate intensity. With acid fuchsin followed by polychrome methylene blue, the keratin layer exhibits a light-blue color, in which the deeper blue granules are conspicuous.

A filament or "hair" has the appearance, in longitudinal section, of a long slender feather, with a central shaft, and lateral webs. The shaft is composed of long, flattened, closely oppressed cells, exhibiting the reaction for keratin, and containing, in their interior, lines of basophilic granules similar to those found more deeply in the epithelium. From this central shaft the lateral branches forming the webs are given off in an imbricated manner, radiating outward and downward.

An examination of an unstained longitudinal section of a filament under a low power shows that the lateral branches given off from the first two or three millimeters of the proximal portion of the shaft are without color, while from this point towards the distal end and progressively increasing in intensity, a brownish coloration of the lateral branches is visible. This coloration is seen on an examination of unstained specimens under a high power to be due to the presence of round, highly refractile, yellowish brown granules, ranging in size from those scarcely perceptible under a one-twelfth oil immersion to others, equalling a red blood corpuscle in size. The smallest granules are found in the proximal portion of the filament, where they are situated in the interior of the fibres composing the lateral webs. Towards the distal end the granules become progressively larger, and many are found lying free between contiguous fibres. These granules do not stain with eosin, picric acid, or acid fuchsin. With polychrome methylene blue, they take on a light green color, with acid fuchsin a reddish orange, but do not seem actually to stain. The fibre of the lateral webs are long, slender, homogenous structures staining with eosin and picric acid. Thus a filament stained with acid fuchsin followed by picric acid shows a red shaft with yellow webs.

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On staining a longitudinal section of a filament for bacteria there is seen to be distributed between the lateral fibres of the web a characteristic bacterium in great abundance. It presents the form of rods, about the width of the hay bacillus, six to eight times longer than broad, straight with slightly rounded ends, and generally joined with others end to end, forming series of four to ten. They stain evenly throughout their length and stain by Gram. The first growth of this organism is found where the refractive granules begin; namely, a point two or three millimeters from the proximal end of the filament, increasing correspondingly in abundance toward the distal extremity. They outnumber greatly all other forms of bacteria which are chiefly cocci and found along the outer margin of the web.

*Summary.* The condition under consideration is thus seen to consist histologically in a papillary enlargement and small round-celled infiltration of the corium, together with protoplasmic reticulation, nuclear degeneration, and excessive keratin formation in the epithelium, the latter on its superior surface being prolonged upward to form filamentous processes, containing peculiar refractile pigmented granules, with which a characteristic bacterium stands in intimate association. It is of interest to note that the hypertrophy affects all layers of the mucous membrane and reaches its greatest development in the posterior and central portion of the dorsum. The condition appears to be primarily of the nature of a chronic inflammation with secondary alterations in the epithelial cells.

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## II.

### CYSTS OF THE EXTERNAL AUDITORY CANAL— REPORT OF A CASE.

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Both retention cysts and new cystic growths are occasionally observed developing from the external ear, but they are rarely found in the auditory canal, and especially those of independent formation. The retention cysts of the sebaceous glands of this part occur more frequently, Toynbee<sup>1</sup> having found this form of tumor, ten times in 1013 cases at autopsy. One is especially impressed with the lack of information on this subject by reference to the text books on otology, the majority of authors making no mention of cysts in this location, while a few dismiss the subject in a scant line or two, and merely state that this form of tumor may occur.

Among pathologists considerable differences exist as to the proper definition of a cyst, its usual meaning being a closed cavity containing fluid or semifluid contents, and from the nature of these contents it is usually spheroidal in shape, but the contour is to a certain extent dependent upon its location and position in regard to surrounding tissues and the pressure exerted upon it. Another describes a cyst as a hollow tumor, whose wall is formed by a continuous membrane, covered with epi—or endothelium and the central cavity is filled with fluid, semifluid or solid contents, excreted or secreted by the membrane. This description being a most conservative view, of necessity excludes a great many tumors containing a hollow cavity filled with liquid and answering to all practical essentials that of a cyst, but lacking a wall covered with epithelial cells. Still another definition is that of a cavity containing liquid or pultaceous material, which is separated from the surrounding structures by a more



or less distinct capsule, and it may be a new formation or a preexisting structure which has become distended by its own secretion or by extravasation into it. This latter definition to my mind being the best and most complete, in addition, practically classifies cysts into two major divisions; those occurring as a result of new tissue development and those resulting from retention of secretion in an already existing cavity. These two classes have also been called cysts of retention and cysts of disintegration and they may contain serum, mucus, colloid material, blood, sebaceous matter, cholesterin and derivatives from epithelial ingrowths, as in dermoid cysts.

Owing to the many causes entering into their production, classification is somewhat difficult, many authors classing them under the general terms of simple and compound; with the latter the otologist has nothing to do as compound cysts do not occur in the ear, all the cases recorded consisting of but one cavity, forming the simple cyst. According to the mode of the origin cysts may result from dilatation of previously existing closed cavities; from retention of secretion of a glandular structure; as part of a new growth; or by a developmental error. The case of aural cyst here presented evidently belongs to the third class mentioned, as microscopically it presented the features of softening and disintegration of connective tissue cells, the fluid contents resulting from the tissue metamorphosis.

M. H., female, age seventeen years. Suppurative otitis media of both ears for over one year. Has never had any serious illness, and the aural discharge came on without pain and with no apparent cause. The left ear presented the usual appearances of chronic suppuration with a large perforation in the posterior inferior segment of the tympanic membrane, while projecting from the right ear and entirely filling the lumen of the meatus was a glistening, pale tumor. This resembled to a marked degree a serous cyst, and was covered with a purulent secretion escaping from the suppurating middle ear, and giving it this appearance by macerating its surface epithelium. Probe pressure caused no unusual tenderness and elicited the feeling of a tense sack filled with a watery fluid. The

blood supply was poor, and no vessels could be seen ramifying over its surface, and it was attached to the superior wall of the canal by a rather large flat pedicle. The cyst was removed intact by snare under cocaine anesthesia, bleeding was slight, and it was then seen that the growth originated on the superior canal wall at the junction of the cartilaginous with the osseous portion. When removed it measured twenty millimeters in length, by seven in breadth, and on section contained a serous fluid almost myxomatous in nature and not as watery in character as we were led to suspect by palpation when the tumor was in situ. Microscopically it consisted of an external surface of flat epithelial cells not taking the stain well on account of necrotic changes as a result of the maceration in the ear discharges. Under this was a thick layer of cuboidal epithelium sharply demarcated from the third layer of connective tissue cells, irregularly arranged and shaped from the pressure of the fluid contents; the bloodvessels of the walls were few in number, small in size and sparsely disseminated. The fourth and inner layer was composed of the same cells with an admixture of fibrous tissue and granular debris forming a well defined wall around the fluid contents.

As isolated glands are irregularly scattered over the auditory canal, especially at the junction of the osseous, with the cartilaginous portion, the cyst undoubtedly sprang from one of these, and while at first sight it presented the appearance of a broken down sebaceous gland, it became apparent, on microscopic examination, that it had developed as an independent formation, and the cyst cavity had further increased in size from that of its original capacity by the diminution of nutriment and subsequent degeneration and liquefaction necrosis of its inner containing wall. The history of the case, as regards its growth, corresponds with what we are familiar with in the tardy development of cystic tumors, in this case having existed for one year. Frequently a number of years pass before the growth reaches a size of any magnitude. On account of the slow growth it adopts itself to the parts, and the shape is altered, corresponding to the locality where it develops, while in cases of longer duration, the pressure from the

cyst may produce dilatation of the walls of the canal. The bone may also be absorbed from the pressure, as in a case cited by Toynbee<sup>1</sup>, in which both the inner and outer walls of the mastoid process had been absorbed by the slowly increasing growth.

When small in size, they usually remain unknown to the patient, and are only discovered accidentally during an aural examination for other purposes, but as their size increases, we have the usual symptoms of canal obstruction as may be produced by any non-irritating foreign body. The hearing for air conduction is to a greater or less extent impaired, depending upon the amount of obstruction that exists to the sound waves, while bone conduction remains normal and autophony may be complained of. Tinnitus is also present, and the symptoms differ in no way from those due to a mechanical obstruction. In this case the external canal was completely filled with the cyst, and it resembled in shape a finger of a glove, exactly corresponding to the lumen of the canal. The presence of a growth, therefore, when it projects from the meatus, is readily appreciated, even by the patient, and when ulceration or suppuration takes place, as the result of pressure or inflammation, symptoms calling attention to the part, are prominent. Usually, however, no subjective symptoms are noticed while the growth is of small size; there is no pain and no discharge, and the cyst may remain small and undergo no change for a number of years. Even when it increases to a size incompatible with the calibre of the canal, pain or even tenderness is not noticed, especially in those cases where the dermal covering remains intact, the patient barely feeling firm pressure with the probe as the sensibility of the parts is obtunded to a considerable extent.

Cystic tumors of the canal may originate in two ways: First, by the gradual accumulation within a pre-existing gland cavity, of the products of its own secreting membrane. Secondly, it may arise by independent formation in the tissues by softening and liquefactive changes, the liquid or semisolid material so produced compressing the cells in the immediate proximity, and these undergoing more or less fibroid change, ultimately form the cyst wall.

It may also be independently produced by the collection of fluid between connective tissue cells, these areas coalescing and fusing into one large cavity, and the surrounding tissues becoming condensed, forming a well-defined retaining wall. A third way by which the cystic tumor may independently originate, exclusive of glandular retention, is by the formation of a fibrous tissue wall around a foreign body, such as a mass of coagulated blood, and later, central liquefaction necrosis taking place.

The structure of the aural cyst, as with that found in other localities, varies with its mode of origin, that is, whether it results from pre-existing structure, such as the retention of secretion in a gland, or whether it develops as first seen from newly-formed cavities. The case presented in this paper, microscopically, well demonstrates the latter in the absence of an endo- or epithelial layer of cells, surrounding the tissues from the fluid contents and forming the innermost cell layer. If of a pre-existing cavity, the epithelial layer is invariably present, but in infrequent instances, when of new formation, an endo-epithelial layer may also be seen, covering the fibrous capsule, especially if the growth be of long duration.

Usually the cyst is isolated and is attached to the adjoining tissues by a large sessile base or it may be a small pedicle, while in some cases the wall may not even form a distinct structure but will be composed of the surrounding tissue which has undergone fibroid change and is more dense in character than otherwise. Unless the contents have undergone calcareous change or have become organized, the cyst is soft and compressible and if small, can be pushed aside with the examining speculum. The location of the glandular tissue in the canal wall gives a clue to the almost constant site of cystic growths at the junction of the cartilaginous with the osseous canal, as the glands are here in larger number than elsewhere in this region and this is especially so on the superior wall, the site from which it will be found that these growths develop. Another factor of considerable import in the choice of location, is the natural constriction at this point, forming the isthmus of the canal and being from its contour the point of greatest irritation. The periosteum and

osseous tissues not being involved in the growth, but the dermal lining alone is concerned in its production.

Gruber (2) reports an interesting case in a male, age fifty-three years, who complained of tinnitus and a feeling of occlusion in the right ear for several months. The watch was heard on contact and bone conduction was normal. The right canal was occluded near the external opening by a soft and elastic growth covered with skin, completely filling the canal and with a broad base on the anterior wall. An exploratory puncture was made and serous fluid obtained, the cyst was then opened with a crucial incision and curetted with a sharp spoon with a favorable result. Buck (3) has had but two cases under his personal observation. In one a small yellow body covered with a thin envelope of epidermis and containing cheesy material, projected from the anterior and upper wall of the osseous canal just beyond the cartilaginous junction. The cyst in the second case was somewhat larger than the first, was slightly constricted at the base, contained cheesy contents and developed from the superior wall of the canal near the upper limit of the tympanic membrane. It was but slightly sensitive when touched with a probe and, while quite firm, was not as solid as an exostosis.

Othematoma may extend from the auricle to the external canal and although of a cystic nature inasmuch as it consists of an irregular cavity containing blood, yet there are no reasons why it should be mistaken for a cyst and under no circumstances should it be classed with these formations. Both furuncles and exostoses may be confused with cysts, but the former is attended with pain and all the symptoms of acute inflammation with local infection and it seems almost impossible that an error in the diagnosis of this condition could be made. Exostoses, however, present more similarity to a cyst, but the history of the case and palpation with a probe will readily demonstrate the true condition. In a case of the nature here reported accompanied with the profuse discharge of chronic otorrhoea, some difficulty is experienced in ascertaining the nature of the affection, as the middle ear cannot be investigated until the obstructing mass is removed and when it

has been macerated in the discharge, one is somewhat at a loss to determine the source of the pus formation.

Large indolent granulations simulate to a marked extent this appearance, but palpation will aid in the diagnosis and when the contents consist of hardened material exploratory puncture will clear up any doubts that may exist. The cyst itself may be the cause of the otorrhoea by ulceration and suppuration and spontaneous cure may be effected in this way, but this termination in the auditory canal is improbable and is mentioned only as a possible contingency.

<sup>1</sup> Toynbee, quoted by Gruber, Diseases of Ear.

<sup>2</sup> Joseph Gruber, New York Polyclinic, Dec. 15th, 1897.

<sup>3</sup> Buck, Diseases of Ear. Third Edition.

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### III.

#### THE USE OF THE SUPRARENAL EXTRACT IN DISEASES OF THE NOSE AND THROAT.\*

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I desire to introduce to your notice this evening the value of the aqueous extract of the suprarenal capsule, in the therapy of the nose and throat. To say that it is a powerful astringent does not accurately describe its unique action, which, even after six years' experience, daily arouses my admiration and wonder. In less than one minute after its application to an inflamed mucous membrane, the nose for example, the parts are blanched even beyond the normal. This effect is decided, startling and constant; in no case have I failed to produce the characteristic whitening. The effect is increased by repeated instillations or by the use of stronger solutions. The extract acted equally in inflammations from any cause. The cause of the redness had no effect on the result. When the nose was inflamed, after a cautery application, the mucous membrane was whitened by the extract as well as in inflammation from local infection or as a complication of general disease. The effect is usually temporary. In most cases, after half an hour, the parts look as they did, before the extract was used. The extract is not irritating. It has no anesthetic property, and when pain was relieved by its use, the benefit came from the lessened congestion produced by the extract. A tolerance is not acquired by its daily use in the nose. No secondary effect has been observed, the mucous membrane not appearing more congested after the effect of the extract had worn off. Furthermore, the extract is not poisonous. In one case, eight ounces of a one per cent. solution were

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swallowed, without causing any apparent disturbance, though the hypodermic administration is painful.

I have used the extract six years in 2,000 cases, more than 15,000 times in hospital and private practice in the treatment of diseases of the eye, ear, nose and throat. It has passed the experimental stage of a new drug with me, and I employ it without hesitation in all cases in which I wish to relieve congestion of the mucous membrane.

*Preparation of the Aqueous Solution.* One part of the dried and pulverized gland of the sheep is mixed with ten parts of water. The mixture stands five minutes, and is then filtered. The filtrate contains about one per cent of the extract, and is now ready for use. The solution should be prepared fresh when needed. After three hours, at the ordinary temperature of the air, 70° F., the solution usually shows a change in color and that it has become less active. It soon becomes offensive from the growth of bacteria, and has then caused infection of the eye and nose. I have not seen any bad results from the use of fresh solutions. The dried glands keep indefinitely and can be obtained from Armour & Co., Chicago, Ill.

The solution of the extract, when properly prepared, is of a light-brown color, and when applied to the mucous membrane of a normal nose, it will bleach it white in one minute. Sterile solutions of the extract, when protected from daylight, are active after six months. Cold preserves the aqueous solution of the extract.

As it is troublesome to make a fresh solution when needed, efforts have been made to preserve it, by the addition of different substances. I have experimented with boric acid, camphor, naphthalin, sodic chloride, glycerin, carbolic acid, trikresol, bichlorid of mercury, nitrate of silver, protargol, alcohol, ether, chloroform, sulphate of iron and other chemicals, to prevent the solution of the extract from spoiling. All were unsatisfactory, either because they precipitated the active principle or interfered with its action in the nose, or else were inefficient. It was also observed that the addition of cocain to the aqueous solution, lessened the activity of the extract. Astrin-gents, when mixed it, interfered with its action. From

these and other experiments, I have come to the following conclusion:

The activity of the suprarenal extract is lessened by mixing it with other substances.

Dr. J. J. Abel<sup>24</sup> has isolated the active principle of the suprarenal, which he finds to be an alkaloid, and has named it "epinephrin." He recently sent me a solution of bisulphate of epinephrin, about one per cent(?). I found it active and non-irritating. Its great advantage was the fact that it did not spoil in solution, thus obviating the trouble of preparing fresh solutions when needed.

When exposed to the light, the active principle was precipitated in three days. In the dark the solution has preserved its properties six weeks. I am much pleased with epinephrin bisulphate and believe that it can be used for all the purposes of the freshly prepared aqueous extract of the dried gland.

*Chemical Properties.* The extract is very soluble in water, insoluble in strong alcohol, chloroform and ether. Vulpian<sup>25</sup> discovered in 1856 that when a drop of tincture of iron is added to the aqueous solution, an emerald green color appears. I have not observed this phenomenon to occur with extracts of other glands. Nitrate of silver precipitates the suprarenal extract from its solution.

*Physiologic Properties.* Oliver and Schäfer<sup>26</sup> find that the extract increases the tone of all muscular tissue by direct action. The suprarenal capsule is necessary to life. Its removal is followed by symptoms of great muscular weakness and death. The intravenous injection of the extract raises the blood pressure enormously. The peripheral arteries are contracted. Their paper contains an extensive bibliography.

*Therapy.* In the treatment of diseases of the nose and throat, it is important to remember that the extract is an astringent, and nothing else. It does not cure any disease. Symptoms caused by congestion are relieved temporarily. Headaches from nasal occlusion and pain in swallowing from congestion of the pharynx or tonsils are benefited. The pain from some syphilitic and tubercular ulcers has been relieved by its astringent effect. The examination of the nasal chambers is facilitated by contract-

ing hypertrophies of the turbinated bodies with the extract. For this purpose it is superior to cocain.

The extract has been used as an adjuvant to cocain. Short operations in the nose, when the mucous membrane is not inflamed, are usually painless with cocain alone. But in nervous people, the nose inflamed, the parts congested after a recent operation, prolonged operations and in bloody operations, cocain does not usually secure complete anesthesia. In these cases the extract is of great service, when used with cocain.

The extract has also been used as an adjunct to the cautery. The mucous membrane is first whitened, and the hypertrophy of the turbinated body appreciably lessened or abolished by the extract. The application of the cautery is followed by a greater benefit and with less reaction than when the extract is not used. The extract increases the effects of other astringents when used first to lessen the congestion of the mucous membrane. It changes a severe inflammation into a mild one at once, or abolishes the congestion altogether, so that the usual remedies for inflammation are better able to control the disease. The healing of ulcers is promoted by the wonderful power of the extract to whiten and contract granulations and lessen congestion.

The reaction after operations is lessened by the astringent property of the extract. The time of healing is very much shortened. I believe that Dr. Joseph A. Mullen was the first to publish the value of the extract in nasal operations.

Dr. Henry L. Swain<sup>15</sup> has made a careful study of the use of the extract in the nose and throat. With it he was able to operate almost bloodlessly even in a "bleeder." A tolerance was not established by its daily use in the nose for weeks at a time, as happens when cocain is used as a nasal spray. In chronic hypertrophies he found only a temporary benefit from its use. In acute, rhinitis, inflammation of the three tonsils, faucial, lingual and pharyngeal—pharyngitis and laryngitis, the extract was of decided benefit in affording relief. He observed no toxic or other bad effects from its use. A suprarenal "habit" was

not induced by the daily use of a nasal spray for weeks at a time.

*Nasal Hemorrhage.* The extract has been of great service in controlling nasal hemorrhage which has occurred spontaneously, or after operations. When properly used it is possible to do extensive operations with little or no hemorrhage. My method is to apply the extract until the parts are whitened, and then cocain and the extract alternately until local anesthesia is complete. A quick operation done painlessly is usually bloodless. If the operation be a protracted one, I stop and apply the extract and cocain alternately as soon as the parts become red or the patient complains of pain. If blood appears, I wait until the hemorrhage ceases and the parts become again pale, by using cocain and the extract frequently.

By this method large exostoses of the septum have been removed without hemorrhage. Asch's operation has been performed with very little hemorrhage and without pain. The extract has been used successfully to control hemorrhage in antrum operations by H. L. Wagner<sup>30</sup> and others. The extract prevents secondary hemorrhage in many cases, but not in all. It does not prevent hemorrhage from visible bloodvessels, and acts best when the parts are blanched white. It has no chemical effect on the blood, and neither prevents nor retards coagulation. In the following case, polypi were removed without hemorrhage by the use of the extract frequently during the operation:

A man aged 80 suffered from polypi which prevented nasal respiration completely. His son, a physician, told me that the removal of one polypus was followed by immediate hemorrhage, which was controlled with difficulty when cocain had been used alone. Secondary hemorrhage followed, and some blood came from the nose for three days. I operated, using the extract and cocain alternately and the parts were completely anesthetized. Five polypi were removed at one sitting without the appearance of a drop of blood at the operation or afterwards. One week later six more were removed without primary or secondary hemorrhage.

I am indebted to Dr. Moschcowitz for the history of the

following case of hemophilia, in which the extract controlled a severe urethral hemorrhage:

"A man aged 22 belongs to a family of "bleeders." After the extraction of a tooth he bled freely for three days. He had an alarming hemorrhage for five days after an incision of the meatus. An attempt made to dilate an urethral stricture with No. 17 F. was followed by a copious hemorrhage. The Doctor then used a solution of the suprarenal extract, syringing it into the urethra before the use of the sound. No. 22 F. was now introduced without any hemorrhage whatever. At successive periods No. 23 F. and No. 24 F. were also passed without hemorrhage. No. 25 F. was followed by some hemorrhage, and No. 26 F. by more. The extract did not prevent hemorrhage when No. 27 F. was passed, which was so profuse as to soil fifteen towels. The hemorrhage was promptly controlled by the extract. The patient had no secondary hemorrhage.

*Acute Rhinitis.* For the treatment of acute inflammations of the nose the internal administration of the extract is beneficial. A physician, aged 32, with acute rhinitis, placed five grains of the dried gland on his tongue, and allowed it to remain without swallowing. In three minutes he felt relief, the nose opened and the discharge ceased. The relief was temporary. A woman, aged 40, with acute rhinitis, obtained temporary relief in the same way. In hay fever, the internal administration has relieved the nasal occlusion and discharge for a short time. A physician aged 40, during an attack of hay fever last summer, after swallowing a 3-grain tablet, felt relief in five minutes. The nose opened, the discharge ceased, and his headache was relieved. Patients who have taken the tablets every two to four hours during an attack of hay fever, and by increasing or regulating the dose, have been made quite comfortable with this remedy alone. The relief obtained to the nasal symptoms by the internal administration of tablets of the dried suprarenal glands is always much less than can be obtained by the local use of the extract. The beneficial results obtained from the internal administration are variable—one reason for this being that the acid of the gastric juice interferes with the action of the ex-



tract. I believe more constant results are obtained by directing the patient to hold the tablets in the mouth until macerated, so that the extract may be absorbed before reaching the stomach.

Dr. Meierhof, of New York, has observed that in hay fever the extract is not beneficial when the nasal mucous membrane is pale. He has kindly furnished me with the histories of the following cases:

"CASE 1: Was a patient of about 48, who has been under observation for eight years but has been afflicted annually for the past fifteen years. His attacks come on in the early part of the summer or late spring, and last until about the second week in July. He never has had asthmatic symptoms in any of his attacks. Driving and railroad traveling always aggravate the symptoms. The nights were generally bad, interfering very much with sleep and making him generally miserable. In former years my treatment before and during his attacks seems to have ameliorated his symptoms, so that he would weather an attack through with less wear than formerly. When he came this year again with his prodromal symptoms of itching of the eyes only, I determined to wait until the attack became full-blown and then try the effect of the suprarenal extract. I can only say that from the first application of the usual solution the patient commenced to experience marked benefit, and from that time on relief continued by making one or two applications daily. The patient slept well and did what he pleased with entire impunity for the balance of the season. My experience with this case made me quite hopeful for any future cases that might come under observation.

CASE II: Was a woman of about 30 whom I saw at my clinic of the Mount Sinai Hospital out door department. Her case was one of the more chronic forms where there is a strong neurotic element. She complained of itching, sneezing and intermittent rhinorrhea. There was no obstruction to breathing, the mucous membrane was somewhat pale but not especially moist. Various remedies were tried without any success or even partial relief, and it was not until the local application of the suprarenal extract that any relief was given, and this was so marked

that when she returned for continued treatment she wore a smile instead of the haggard expression formerly. She still comes for treatment, but is apparently much improved.

CASE III: Was a patient of about 30, living at the seashore. I saw him in the middle of August, and I believe this was his third season of hay fever. His brother was also a victim to hay fever, Case IV, and a sister had chronic asthma and spent a good part of her time in the mountains. I saw this patient a few days after the attack had made its appearance, and commenced immediately with the suprarenal extract to the nose. The mucous membrane of the nose in this case was very watery and pale, the pallor giving the appearance of a piece of beef having been rinsed in water. The application when first made seemed to aggravate the symptoms for a short while, but a little later improvement seemed to follow. The patient was taught to use the extract at home, and on the whole thought he suffered less this year than in his previous attacks. At least he lost fewer night's sleep than formerly.

CASE IV: A brother of Case III, came also about the middle of August, and spent the entire summer in the city. Asthma accompanied his attack and he had his trouble for a number of years. The mucous membrane was very watery and had the typical washed beef appearance. The patient was irregular in his treatment, but on the whole thought he had been benefited by the application of the suprarenal extract; but as far as I could observe I honestly could see no improvement.

CASE V: Was a lady of about 38 years, who also had the asthmatic accompaniment with her hay fever. I saw this case also in the middle of August. I made two applications of the suprarenal extract, from which she seemed to feel worse, and she then discontinued her visits. Here the mucous membrane was also very watery and had the peculiar pale color.

CASE VI: Was a boy of about 12, who suffered last year from an attack. I saw this patient about the middle of August. The mucous membrane was pallid and watery; a deviated septum and also a spur complicated the condi-

tion. Suprarenal extract was applied at the office by me, and at home by the patient, with the result that the patient required one to two handkerchiefs, where before treatment seven or more were required daily, and he could breathe with his mouth closed; there was also more restful sleep than before."

Dr. S. S. Cohen<sup>21</sup> of Philadelphia, is a sufferer from hay fever. He obtained relief by taking tablets of suprarenal gland, internally. Five grains were placed in the mouth and dissolved slowly. In fifteen minutes the nose felt freely open and the discharge ceased. The dose was repeated at irregular intervals three or four times daily. No secondary effect was observed. He noticed no disturbance in his circulation from the tablets.

He wrote to me that in 1899 he treated six cases of hay fever; five successfully, and one unsuccessfully, by the combined local and internal use of the drug.

James E. Newcomb,<sup>16</sup> E. W. Wright,<sup>18</sup> J. Clarence Sharp<sup>19</sup> and Beaman Douglass,<sup>20</sup> have also recommended the use of the extract in hay fever. Douglass' paper covers the ground in a very able manner.

*Chronic Rhinitis.* Some forms of chronic congestion and swelling of the mucous membrane of the nose have been decidedly benefited by the local and internal use of the extract. The nose opened and the discharge ceased. The relief was always temporary, and no chronic case was cured by me with the extract alone. When combined with other treatment, the extract hastens the cure.

*Syphilis of the Throat.* A woman, aged 45, came to the dispensary with a secondary eruption. The hard and soft palate, tonsils and pharynx, were red, swollen, ulcerated and exceeding painful. The patient had great difficulty in swallowing. The action of the extract in this case was gratifying. The redness disappeared, the swelling became less, and the patient swallowed without any pain whatever. Two days later the patient reported that the pain had returned, but that it was much less than before treatment. The patient recovered after a course of mixed treatment.

The extract only gives temporary relief in syphilis of the throat.

*Tonsillitis.* The redness, swelling and pain are relieved temporarily by the use of the extract. This is true of all forms of tonsillitis, including peritonsillar abscess. I believe the duration of acute tonsillitis is much shortened when the extract is combined with other treatment. In the operation for tonsillotomy, primary and secondary hemorrhage, are appreciably lessened by the use of the extract, before and after the operation.

*Acute Laryngitis.* The extract, when applied locally, whitens the mucous membrane of the larynx. The voice is improved. Curtis<sup>44</sup> has used it successfully with singers whose voice was affected by acute laryngitis. I have seen immediate improvement in the voice follow after the internal administration of the extract.

*Tubercular Laryngitis.* In one case with swollen arytenoids and tubercular ulceration, the extract whitened the congested membrane, lessened the swelling and relieved the pain on swallowing. The voice became more natural, stronger. The relief was temporary.

*Acute Edema of the Throat.* In two alarming cases the relief obtained from the use of the extract was magical. Dr. H. Boeker treated the following case:

A man, aged 40, with erysipelas of the head and neck, developed throat symptoms. The doctor was sent for hurriedly in the night, and found the patient breathing with great difficulty. The tongue, palate and pharynx were swollen. The air passed through the larynx with a whistling sound. The symptoms were so urgent that an immediate tracheotomy seemed necessary. The suprarenal gave immediate relief. Five grains of the dried gland were placed on the patient's tongue. The dose was repeated hourly for four hours and then stopped. The relief was permanent.

Dr. S. S. Cohen had a case of angioneurotic edema of the pharynx and tongue in which he believes life was saved by the local use of the dried gland.

#### CONCLUSIONS.

1. The suprarenal extract is a powerful astringent without objectionable properties.
2. The solution of the extract should be prepared fresh

when needed, and should not be mixed with any other substance.

3. In the treatment of diseases of the nose and throat, other remedies should be employed with the extract.

Finally, since the secretion of the suprarenal gland is one of the fluids necessary to life, its administration as a drug causes less physiologic disturbance than a foreign substance, and this fact may explain why it has so universally been of benefit, and why its use for six years by so many physicians has not discovered any serious objection to its employment in every case of congestion of mucous membranes. And I wish to repeat what I have said before in previous papers, that within the sphere of its activity, we have absolutely no other substance which can take its place.

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#### IV.

### NEW INSTRUMENTS FOR THE CORRECTION OF IRREGULARITIES OF THE NASAL SEPTUM.

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The object sought in the correction of irregularities of the nasal septum is to establish or help to establish and maintain normal functional conditions either in the nose itself, or to relieve some reflex irritation in some other organ, more or less remote from it.

I say functional, because the majority of irregularities of the septum, which are certainly abnormal conditions, do not produce any functional disturbance whatever. I advise, therefore, operative interference in those cases only which I know, or have good reasons to believe, interfere with or unfavorably influence normal functional conditions in the nose or reflexly in other parts.

The instruments included in this set were devised some years ago, and some of them have been published. These have been improved since and that is my excuse for calling attention to them the second time.

In the original set each blade had a handle and was a separate instrument, and as there were no provision for shifting the position of the blade, to cut either upward or downward, right or left, it was necessary to have two of each, making eight separate instruments in all, whereas by the improvement in (Fig. 1) I have reduced the number to four blades and one universal handle. Not only is this improvement a saving in cost, and number



of pieces, but also by means of several notches on the heel of each blade, it may be set in five different positions as may be desired for any special manoeuvre, or to suit the fancy of any individual operator. Some prefer a straight saw, some one set at angle of thirty degrees, and others yet prefer one at sixty degrees angle. On the heel of each blade are five notches for the five different positions. The central one gives a straight instrument, the two on either side give the blades an angle of thirty and sixty degrees for cutting either upward or downward. There is no special way to hook the blade over the rivet in the handle, as it cannot be done wrong. When the blade is hooked in and placed in the position desired, by turning the thumb screw on the end of the handle to the right, a wedge-shaped plug is driven into a notch on the blade's heel which locks it securely.

To change the angle or position of the blade, simply loosen the thumb screw and shift the blade without removing it from the handle.

These instruments are put up in hard wood cases, or may be purchased without case, either in full set or parts of a set as desired. A full set has the following instruments: One straight saw, two groove saws, one rasp, (Fig. 1), six intranasal tubes, (three right and three left (Fig. 2), (and one heavy spatula.

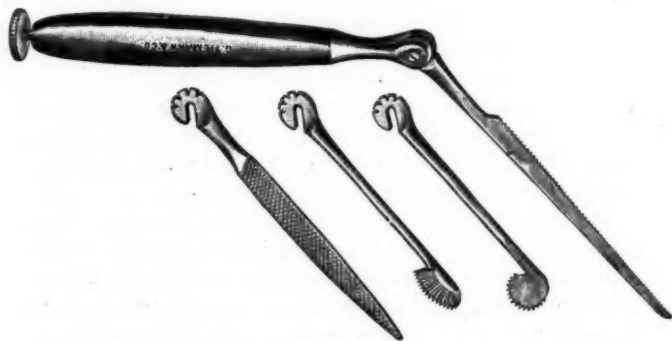


Fig. 1.

The straight saw does not differ in appearance from the common saw in use. The metal is stiff and the teeth are

short and thick, which prevents it from hanging on sharp spurs or spicula, and from pinching. One groove saw is thin and cuts a narrow uniform groove, while the other is wedge-shaped and cuts a V-shaped groove, and is used especially upon the convexity of a deflection. When the septum is very thick, and obstructs respiration in this way, a couple of grooves sawed parallel with each other and the A-shaped partition between them chiseled out, often sufficiently increases the breathing space.

The rasp is used to smooth down rough surfaces left after using the saw, chisel or burr, and to remove small spurs. It is better for these purposes than any other instruments because it takes away less of the soft tissues. It does not readily take hold of the soft structures, but pushes them before it, attacking only the hard structures. All of you have noticed this in filing the finger nails how rapidly the nail is removed without injuring the soft parts.



Fig. 2.

The intranasal tubes are rather longer than those generally in use. The distal end is beveled off from above down, which allows it to ride under the turbinate gaining in length, and thus gives better leverage. The tubes stay in position better. They are perforated all around from the escape of fluid discharges. The outer end is made to conform to and is covered by the end of the nostril which holds it accurately in position. In removing the ordinary sized spur or nodules, I have nothing new to add either in the mode of operating, or in the technic.

In removing small sharp spurs I use the rasp. In very thick septa, which by their thickness interferes with normal respiration, the only thing to do is to groove them, and the method suggested above has given fair results. In all operations for the correction of a deflected septum, I use the groove saws in preference to a knife, scissors or any sharp cutting instruments. I like the spatula for straightening up the septum, because the parts are seldom much

injured by it. The forceps seem to me to do injury by breaking or crushing the septum unnecessarily.

Some of the advantages of this method of procedure are:

1. The patient gets well in a shorter time and with a smoother and probably a better operation.
2. Hemorrhage is less.
3. Wounding the membrane on the opposite side is generally avoided.
4. The saw cuts bone as well as cartilage.
5. The danger of permanent perforation or ulcer is greatly reduced.
6. When the mucous membrane on the opposite side is not injured the tube rests upon sound membrane.

Sometimes the upper or lower portion of the septum is too thick to bend, and will not allow it to be pushed into position. It then becomes necessary to groove it in its upper or lower part or both to weaken it. This may be done on either side of the septum. Again sometimes the concavity is very deep, and the surrounding structures so rigid that the septum could not be straightened, without providing for the redundant flaps. In this case, saw a crucial groove, or as nearly at right angles as possible. The flap thus formed will slide over each other, when the septum is straight while the redundant mucous membrane on the opposite side will fold into a pouch against which the tube will rest. Subsequently this pouch will greatly disappear. Always avoid, if possible, wounding the mucous membrane in the side in which the tube is to be placed. The tube may best not be removed until the septum is solid, which takes from two to six weeks. It is generally not necessary to place a tube in but one nostril. To take out the tube too early would allow the deflection to reform while the hard structures are yet green.

The usual antiseptic precautions are necessary. The after treatment consists in douching out both nostrils (through the tube in one side) two or three times daily, with some antiseptic solution, and notice, also when the swelling subsides that the tube is not too loose—it might possibly pass into the larynx.

General anesthesia, except for children, is not necessary,

in fact I prefer to have the patient co-operate in getting away the blood and mucus.

A 10 per cent. solution of cocain and a solution of supra-renal extract of the same strength is generally sufficient to render the operation almost painless and bloodless.

Patients who faint or become sick, may be placed in the recumbent position and the operation proceeded with. Some operators prefer the recumbent posture, but I find the sitting posture more generally convenient.

These instruments are made by Geo. Tiemann & Co., 45 W. 32nd St., New York.

V.

SOME IMPROVED NOSE, THROAT AND EAR  
INSTRUMENTS.\*

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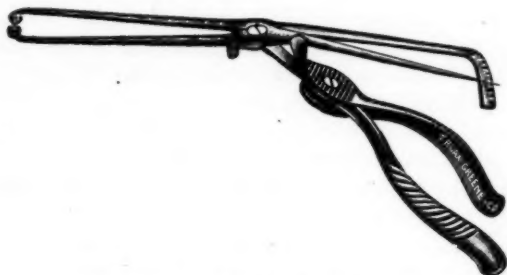


Fig. 1. Nasal Septometer ( $\frac{1}{2}$  size).

The new nasal septometer shown consists of two delicate non-crossing arms pivoted together at their exact centers and terminating at their distal ends in bulbous points bent inwardly so as to oppose each other and thus act as a calipers, while the opposite ends of these arms terminate respectively in an index needle and a measuring scale so the distance between the distal points is at all times accurately shown upon the gauge. A weak spring operates to bring together the distal points and at the same time to separate the handles which, when pressed together, cause separation of the caliper points. A device of this nature is often of great value in determining the exact thickness of the nasal septum at different points, particularly when the thickening is associated with deflection.

\*Presented before the Chicago Laryngological and Climatological Society, Dec. 28th, 1899.

This adenoid curette is a modification of the Gottstein model with the addition of cutting side blades in accordance with the idea of Hartmann. The end cutting blade is made somewhat shorter than in the Gottstein instrument, and is so curved that it will reach the very apex of the naso-pharyngeal space. The end blade is furthermore placed at an angle whereby its cutting edge can accurately



Fig. 2. Adenoid Curette ( $\frac{2}{5}$  size).

scrape all portions of the pharyngeal vault. The method of use is first to give the three vertical strokes the same as with the Gottstein instrument, after which the side cutting blades may be employed by curetting successively from either Eustachian prominence, down in the adjacent fossa of Rossenmueller, and backward therefrom to the median line. This instrument is made in two sizes, the smaller being for infants or children under four years of age.

I will also take the privilege of showing an improved nasal trephine and guard. As compared with the usual form it is much longer in the shank, thereby obstructing the view less and, at the same time, better facilitating operative work upon points far back upon the septum or



Fig. 3. Nasal Trephine and Guard ( $\frac{3}{5}$  size).

attacks upon the hypertrophied middle turbinal. The distal point of the guard terminates in a thin, flat projection which simultaneously serves both as a guide and a guard, and is so thin as to be capable of entrance between the middle body and the septum even when pressure contact is pronounced. These three instruments have been previously described in recent publications.\*

\*Fig. 1. The Laryngoscope, Dec., 1899.

Fig. 2. The Medical Monograph, Feb., 1899.

Fig. 3. The Laryngoscope. Sep., 1899.

While the two former may be called new, or productions of the current year, the latter I have been using for the past three or four years.

I next show a tonsillotome of the Mathieu pattern in which the ring knife and shields are transversely curved on the flat in order to better conform to the shape of the faucial side walls. In this way the tonsil is more completely removed, as the cut is made deeper in the middle of the tonsil than when the usual flat blade is employed. Another incidental advantage of the curve is that it prevents the possibility of the instrument being put together with the cutting blade wrong side to, as sometimes occurs with



Fig. 4. Curved Tonsillotome ( $\frac{2}{5}$  size).

the form in general use. The barbs of the piercing needles are also removed, as they are always useless and sometimes harmful as, for example, should the ring knife break while in use, or should a calcareous mass be encountered. While I have never before publicly exhibited or described this modification I have had it in use for nearly ten years. The curve in the ring knife of the instrument shown (which is a No. 2) is that of a  $\frac{3}{4}$  inch radius. For this size of fenestra I think a one inch radius would be preferable.

The pair of saw blades shown, being a right and a left, are, like the tonsillotome, curved on the flat, and furthermore, like the tonsillotome, are not recent improvements, as they were designed some eight or ten years ago, though I have carelessly neglected to show or describe them at



Fig. 5. Saw Blade Curved on the Flat ( $\frac{1}{2}$  size).

an earlier date. They were made for me by Tiemann & Co., and were ordered through Chas. Truax & Co. of this city. Enchondromata are often met with which are so near to the nasal floor as to preclude the use of a flat saw blade. In such cases a curved blade can be much more satisfactorily employed, until the upward cut is well started,



when the operation can be completed with a suitable flat blade saw.

In figure 6 is shown a toothed spring tonsil forceps in which is provided inside of the terminal teeth a grooved or serrated surface on either blade so when closed to-



Fig. 6. Spring Tonsil Forceps ( $\frac{2}{3}$  size).

gether a side hold can be taken from either edge. This forceps is designed for use in doing a tonsilleotomy by "electro-cautery dissection" when, owing to friability of the tissue, the more simple forceps with only the toothed ends will not take a sufficiently firm hold.

This head-band and mirror possess some novel features. The non-elastic band is so attached to the outwardly-bent ends of the metal head-plate as to obviate its touching the forehead for a space of about one inch on either side thereof. In this way the wearing of the head-band is more comfortable than when the contact is continuous,



Fig. 7. Head-band and Mirror ( $\frac{1}{3}$  size.)

particularly in warm weather, and furthermore a greater solidity is derived through the points of attachment of the tape to the head-plate being thus elevated. The head-plate is of liberal size in order to give solidity, and is lined with sheet gutta-percha which is preferable to the usual

soft pad. The ball upon the back of the mirror is so attached to a projection therefrom as to be at its very margin, and thus a much greater range of mobility is secured than is given with the form in general use. The thumb-screw is large, and the socket-arms extra heavy and strong, and additionally so shaped as to favor increased latitude to the adjustment of the mirror.

The cautery handle is patterned after the Fleming handle which has been for many years a favorite. In comparison therewith this handle is both heavier and longer, and the hard rubber covering is in one piece instead of being in



Fig. 8. Cautery Handle ( $\frac{3}{5}$  size).

two parts fastened together with screws. The chief feature of difference however is that instead of the contact point being concealed within the handle it is wholly exposed and consists of two solid buttons very close together and so located that the circuit is closed when the contact spring is pressed against them.

For a long time I was annoyed in my use of the Davidson powder-blower by the powder becoming impacted with even a moderate air-pressure. Latterly I have found a



Fig. 9. Ear Extension for Powder Blower ( $\frac{3}{5}$  size).

remedy by having a very small hole made in the inlet pipe about one inch below the neck of the bottle. In ear work I employ a long slender extension tip.

I also show a post-nasal spray tip for the Davidson spray bottle which I have found to be invaluable. It is so wide



Fig. 10. Post-Nasal Spray Tip ( $\frac{4}{5}$  size).

and strong as to serve nicely as a soft palate retractor while spraying, which in my belief is an important point. It is particularly strong at the bend so as not to break, and throws three streams in fan-shape. I also use this tip for spraying the anterior nares, and for this purpose find it to be the most satisfactory tip I have used, as by the fan-shaped distribution of the spray the entire fossa from floor to attic is reached.

At times, after intra-nasal operations, there is a tendency for adhesions or synechia to form. Latterly, in order to prevent the formation of such adhesions, I have been using splints made of sheet hard rubber of about  $\frac{20}{1000}$  of an inch in thickness, and generally formed as shown in cut, though the shape can be varied to meet the



Fig. 11. Nasal Splint (full size).

requirements of each individual case. When slightly warmed the rubber can, with a curved shears, be easily cut in the shape required. A good way is to do the cutting while it is being held in warm water. The two holes at the forward end are to allow of the tying in of a narrow strip of nosophen gauze, with a knot on either side, so that by the increase of thickness the splint can not slip too far back in the nose. Being thin and yielding these splints are introduced easily and readily conform to the requirements of a tortuous passage.

Another little improvement which I have found to be advantageous is to have a very small hole made in my ear



Fig. 12. Ear Tip of Auscultation Tube ( $\frac{1}{2}$  size).

piece of my auscultation tube. It is at no time a disadvantage and sometimes by allowing a perceptible escape of air reveals a perforation not previously detected.

Finally I show a device for oto-pneumatic massage, to be used in connection with an electric motor pump, and attached to the pump hose at B. The improvement consists in the addition of an exhaust syringe, in combination with an opening in the ear-piece (A) which latter is



Fig. 13. Oto-Pneumatic Masseur ( $\frac{1}{3}$  size).

closed by the operator's thumb as suction is being applied to the retracted drum-head, thus allowing of a combination of slow and forcible massage with the rapid vibrations. When the syringe piston is being forced downward the hole is of course left open.

Columbus Memorial Building.

## VI.

### OSTEOMA OF THE AUDITORY CANAL. \*

THOMAS R. POOLEY, M. D.,

NEW YORK, N. Y.

On May 25, 1899, I was asked by my colleague, Dr. R. C. Myles, to see a patient of his in the Clinic of the New Amsterdam Eye and Ear Hospital. He was a sturdy, healthy-looking Italian 30 years of age; did not complain of pain, but came on account of deafness in the right ear, and obstruction of the auditory canal by a growth.

Upon examination, there was found to be a tumor situated just within the meatus, which almost completely filled the entrance to the canal, leaving only a narrow chink anteriorly. The obstruction as seen on inspection resembled the ordinary integument, but on pressure was found to be hard in structure, the skin covering its anterior portion gliding over it. The examination gave him no pain, the growth did not seem to be accompanied by any irritation or inflammation, the only complaint being of the mechanical obstruction of the ear and consequent deafness. He had only noticed its presence about six weeks before he came for advice, and there was no further history regarding its development to be obtained from the none too intelligent patient who could scarcely speak or understand any English. The diagnosis was uncertain. It was thought possible that it might be a polypus of a fibrous nature which had resulted from an otitis media chronica, an osteoma, or exostosis. To further determine its character, Dr. Myles removed a portion with a snare, but it so completely filled the canal that only a small piece was thus removed, which was plainly of a cartilaginous nature.

On June 2, during the absence of Dr. Myles from the

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\* Read by title before the American Otological Society.

city, he came to me complaining of intense pain. There was now an enormous swelling both in front of and behind the ear. On pressing the swelling in front of the ear, and by passing a probe between the walls of the canal, a quantity of foul smelling pus escaped. There was a good deal of constitutional disturbance and a slight rise of temperature. Under these conditions I determined at once to make an attempt to remove the growth. The patient was put under ether. By passing a probe as well as I could around the growth, it seemed to be adherent only in one place to the posterior wall of the canal near the membrana tympani. This suggested the possibility of its removal by forceps only. I accordingly got firm hold of it as deeply as possible with a pair of Hinton's forceps and attempted to wrench it out; in the second attempt I was successful in doing so. Immediately following its removal there was an escape of a large amount of fetid pus. Examination for the point of attachment of the tumor was now made with the finger, and the place where it had been broken off found by the roughened bone which was most thoroughly scraped with a sharp spoon and much polypoid tissue removed. So far as could be ascertained, the membrana tympani was not perforated. The auditory canal was then loosely packed with iodoform gauze and a roller bandage applied. A macroscopic examination of the growth showed a tumor  $3/4$  inch in length by  $1/4$  in width; its outer part consisted of a dense fibrous or cartilaginous tissue, and its centre of bony structure; no microscopic examination was made. The patient was admitted to the hospital and kept in bed. An immediate subsidence of pain was followed by a good night, and the constitutional disturbance ceased at once.

The further progress of the case is soon told. The meatus and canal were daily cleansed by syringing with a carbolic acid solution, the discharge rapidly diminished and the swelling disappeared, until June 5, when the patient was discharged from the hospital, all swelling around the ear had gone, and there was no pain.

Otoscopic examination showed the site where the growth had originated, to be in the posterior superior wall of the canal, close to the drum-head, and the membrane intact. There was still considerable swelling of the walls of the

canal, but hearing was good. For some time the patient came daily to the clinic to have the ear cleansed; there was a gradual cessation of the discharge, until it ceased altogether; the swelling, too, entirely disappeared, until the canal was of the same dimension as the other, and the hearing was fully restored to the normal.

The history of this case clearly shows that there was no connection between the bony growth in the auditory canal and a chronic suppuration of the middle ear; but that it was due to a circumscribed chronic periosteal inflammation in the osseous meatus. According to Schwartze, the spot of preference for caries of the meatus is the posterior upper wall, near the *membrana tympani*, corresponding either to the floor of the antrum mastoideum, or to the point where the antrum enters the tympanum. The presumption then is that from this point were formed polypus granulations, which gradually became converted into cartilaginous and bony tissues by a process of ossification extending from its base, until it grew so as to nearly fill the auditory canal, and reach the meatus. The tumor was osseous only in its center, and surrounded by a cartilaginous covering, which goes to show that the nature of such growths, whether spongy or compact, depends upon the more or less advanced state of the osseous structure.

An interesting feature in the case is that troublesome inflammatory symptoms which made the necessity for immediate removal of the growth, were awakened by the attempt to remove a part of it with a snare; but there can be little doubt this would have in time been rendered necessary by the accumulation of pus or other secretions behind it. It is also worthy of remark that it was so easily detached from its attachment, by simple traction with a pair of forceps, which certainly could not have been done if the tumor had been a true extosis. Of course this kind of a tumor is not to be confounded with those which occur on the inner portion of the osseous meatus, which are often bilateral, of the consistence of ivory, have no pedicle, are immovable, of a conical form, and bear no relation to any other affection of the ear. Such a case I have described elsewhere (*New York Medical Journal*, March 9, 1889), in which I successfully removed the growth by the use of



the electro-osteotome, an instrument devised by the late Dr. J. Milton Josiah Roberts, of New York, as a motor power for drilling out or removing these growths.

ABSTRACTS FROM CURRENT OTOLOGIC RHINO-  
LOGIC AND LARYNGOLOGIC LITERATURE.

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I.—EAR.

**A Case of Influenza Followed by Mastoid Abscess, Sinus  
Thrombosis, Meningitis and Death, Autopsy.**

ALLPORT, Chicago. (*Archives of Otology*, Vol. XXVIII, Nos. 5 and 6.) Patient was a man, aged 76, who, two years before, had fallen from a loft, lighting on his head. On recovering from the effects of the fall, his memory was bad. During an attack of influenza there developed left middle ear suppuration with pain and swelling over the mastoid. Six months later, the patient came under the observation of the author, and he found tenderness of the left mastoid on pressure, Mt. intact and a fistula in the lower part of the posterior wall of the auditory canal, from which fetid pus escaped. On opening the mastoid the cells and antrum were found full of pus and granulation tissue. For two weeks subsequent to the operation nothing of note occurred; then patient became restless and irrational. Temperature varied from 97° F to 99.6° F. Pulse 76 to 82. A diagnosis of acute meningitis was made. The skull was trephined over the temporo-sphenoidal lobe and dura were found inflamed.

On autopsy a few drops of pus were found at trephine opening. The dura was completely adherent to skull by old adhesions. Dura and pia deeply congested and a small pyriform thrombosis found in the left lateral sinus.

Campbell.

**Multiple Tubercular Tumors of the Skull and of Both Tym-  
panic Membranes.**

FREYSING, Rostock. (*Archives of Otology*, Vol. XXVIII, Nos. 5 and 6.) A man, aged 19, of good family history, four months before admission noticed on his right leg a hard, rounded, painless tumor about 1/2 inch in diameter. Painless swellings later appeared behind the right ear and on the left side of the forehead. There was some suppu-

ration in each ear. His general condition was good and there was no fever. There was a small swelling near the inner canthus and a large fluctuating, tense swelling between the left temple and the frontal eminence. Another tumor behind the right mastoid the size of half a hen's egg appeared to be adherent to the sterno-mastoid. The left Mt. was changed into a bright red granulating mass and in the lower part was a perforation.

The right Mt. is cloudy and in its posterior third were two circumscribed grayish-yellow swellings which ran over upon the wall of the canal. The hearing in the right ear was much better than in the left.

The tumor masses were removed and showed interiors lined with dirty granulation tissue, which on microscopic examination proved to be tubercular.

The author then proceeds to give a resumé of tubercular tumor growths on other parts of the body. *Campbell.*

#### Otitis Media In Early Childhood.

BARTH, Leipzig. (*Archives of Otology*, Vol. XXVIII, Nos. 5 and 6.) Of 600 sick infants ill with various affections, 80 per cent. were found to have a lesion of the middle ear.

Autopsies have shown that the Mt. usually remains intact in most of the cases of inflamed middle ear in infancy. In early childhood, the more remote parts of the ear are not involved during acute middle ear inflammation as they are in the adult life. The author would hesitate to open the mastoid cells in the child if the only symptoms were swelling and redness of the upper and posterior portion of the alimentary canal. The middle ear may be inflamed and contain pus, yet the Mt. showed no alteration, other than a bulging at some point.

In the treatment of otorrhea in young children the author uses irrigations and has the patient come to him every day. This insures proper cleanliness and he is enabled to treat complications early.

In order to keep the opening in the Mt. free so long as acute symptoms are present, after cocainizing the edges of the perforation with a 10 to 20 per cent. solution and subsequently drying the parts, he places a crystal of chromic acid directly into the opening. When the acid has

acted sufficiently long it is removed with a cotton probe. This leaves a smooth round opening which heals readily after the flow of pus has ceased. *Campbell.*

**A Case of Epidemic Cerebro-Spinal Meningitis with Bilateral Otitis; Trephining of Both Mastoids and Exposure of the Transverse Sinus; Recovery.**

STEIN. Moscow. (*Archives of Otology*, Vol. XXVIII, Nos. 5 and 6.) A child, aged 6, has been suffering from whooping cough for four months, when, with the onset of epistaxis and fever, there developed delirium, double-sided otorrhea constipation, enlarged spleen, dilated pupils, convulsions of both upper and lower extremities, general hyperesthesia and incontinence of urine. Temperature varied from 101° F to 102.5° F, pulse from 110 to 130. The ophthalmoscope revealed anemia of the fundus of both eyes and edema of the optic papilla. There was marked rigidity of the muscles of the neck.

The temperature fell to 99.4° F and on account of the obscurity of the symptoms it was decided to open the mastoids. Upon exposing the antra and transverse sinuses, stringy muco-pus but nothing more was found. During the next two weeks there was but little change in the child's condition, then there was a gradual return of the various senses.

Microscopic examination of the discharge at various times revealed the presence of the diplococcus intracellularis of Weichselbaum. The probability of this being a case of epidemic cerebro-spinal meningitis is enhanced by the fact that during the sickness a brother, aged 4, was attacked and died after four days illness, with typical symptoms of meningitis. *Campbell.*

**On the Thyroid Treatment of Chronic Deafness.**

BRUCK, Berlin. (*Archives of Otology*, Vol. XXVIII, Nos. 5 and 6.) The author after reviewing the favorable reports of Vulpis, Brüche and Alt, gives his experience of the thyroid treatment in forty cases, carefully selected, and all being between 18 and 48 years of age. The author has yet to see a single case of positive improvement in hearing and concludes, that the treatment by thyroid extract of chronic deafness, no matter how it originated, is useless in every case, in which all other methods have equally failed.

*Campbell.*

**Tinnitus Aurium.**

PANSE, Dresden. (*Archives of Otology*, Vol. XXVIII, Nos. 5 and 6.) The author after very carefully reviewing the literature in regard to the causation of noises in the ears comes to the following conclusions:

1. Almost all sounds should be designated by their pitch.

2. The pure conduction-sounds arise from the diminished outlet of sound, due to rigidity of the conducting apparatus. Inasmuch as the motility of the latter is required for hearing only low notes, the fixation is an obstacle to the outlet of these notes alone. Pure conduction-sounds are mainly placed between 16 and 256 vibrations.

3. The higher pitched sounds are due to processes in the inner ear. This statement is sustained by their occurrence in normal persons after such influences as are known to injure the inner ear and also by the effect that therapy has on them. They may be produced (a) by reflex from the external meatus, middle ear, and many different parts of the body.; (b) by changes in the inner ear or the nerve itself. In rare cases, however, low sounds may, perhaps also, originate in the inner ear.

4. Hearing of complex sounds like melodies, etc., is not *prima facie* proof of a cerebral affection.

In respect to treatment, never perform any grave operations upon the conducting apparatus when the sounds heard are high pitched, and especially removal of the stapes should not be attempted. *Campbell.*

**The Contagiousness of Acute Otitis Media.**

LERMOYEZ. (*Presse Medicale*, Aug. 12, 1899.) The contagiousness of acute otitis media is shown by numerous clinical observations made by the author, who urges the importance of isolating patients suffering from this affection. *Goodale.*

**The Importance of an Ophthalmic Examination in Purulent Affections of the Ear.**

DELSTANCHE, FILS. (*Gaz. hebdom de med. et de chir.*, Sept. 14, 1899.) From an examination of contemporaneous otologic literature, the author finds that in 122 cases of endocranial involvement in middle ear inflammation,

the ophthalmoscopic examination of the fundus gave a positive result in 54 per cent. of the cases. These results are close to those of Gradenigo (52.3 per cent.) and those of Jansen (53 per cent.). In a personal examination of 15 cases of severe middle ear and mastoid inflammation unassociated with endocranial involvement, the ophthalmoscopic examination was negative. The author concludes that optic neuritis or choked disc, if present in such cases, almost always point to endocranial complications.

*Goodale.*

**On the Motor Innervation of the Velum Palati with Reference to a Case of Right Hemiplegia of the Velum and of the Larynx in a Child, Following Radical Operation for Tubercular Otorrhea of the Left Side.**

BRINDEL. (*Journ. de medecine de Bordeaux*, Aug. 6, 1899.) A child, on whom an opening of the left middle ear and mastoid for tubercular disease had been performed, was suddenly taken twelve days later with a complete paralysis of the right half of the velum palati and of the right half of the larynx. The facial muscles were normal. Fifteen days later a paralysis of the external rectus of the right eye came on. The child showed a tubercular infiltration of the left apex and of the tracheal and bronchial lymph glands. The author is inclined to the supposition that a tubercular nodule opened in the floor of the fourth ventricle compressing the spinal vagus, thus producing the paralysis of the palate and larynx and that later another nodule appeared at the level of the external motor oculi. In this manner a confirmation would be obtained of the view of Lermoyez that the velum palati is not innervated by the facial nerve but by the spinal vagus.

In the discussion it was pointed out by several speakers that isolated paralysis from intracranial tubercular nodules are extremely rare. In this case the possibility is not excluded of peripheral causes of pressure along the vagus trunk.

*Goodale.*

**Multiple Rupture of the Membrana Tympani.**

OVERACKER, KATE. (*Laryngoscope*, July, 1899.) The membrana tympani was ruptured in three distinct places as a result of injury.

The conditions promptly yielded to treatment,, the perforations closing on the tenth day. All the symptoms that accompanied the affection disappeared and hearing was greatly restored.

About eight months afterward the patient developed severe cerebral symptoms (giddiness, vomiting, etc.). The drum was again reopened and extensive cicatricial adhesions between the drum and inner wall of the tympanic cavity were removed. There has been no return of the unfavorable symptoms since. *Seymour Oppenheimer.*

**A Case of Temporal Abscess Drained Through the Attic after Ossicectomy and Curettement.**

STILLSON, HAMILTON. (*Laryngoscope*, July, 1899.) A case of cerebral abscess in the region of temporal lobe was drained through the attic. After the removal of the entire membrana tympani, necrosed malleus and incus, the vault was explored with a probe. A narrow ragged opening was found in the tegmen which was subsequently removed. After careful curettement a free flow of pus took place. The cavity was drained and patient made a good recovery. *Seymour Oppenheimer.*

**Mastoiditis. The Importance of Early Surgical Treatment.**

MCCAW, JAMES FRANCIS. (*N. Y. Medical Journal*, December 30, 1899.) McCaw's article contains nothing new, but the importance of the proper recognition and early interference in these conditions is so paramount that it cannot be emphasized too strongly.

The danger is not in operating, but in waiting until the disease is beyond our control.

The conclusions of the author are:

1. In threatened mastoid involvement and in mild acute cases the conservative plan of treatment should be employed for a week or ten days, unless dangerous symptoms arise.

2. Operative interference should be instituted in acute cases where there is sagging of the postero-superior canal wall, where the infection is of a virulent type and in all cases complicating chronic otorrheas.

*Seymour Oppenheimer.*

**Uncommon Pyogenic Infection of the Middle Ear.**

SATTLER, ROBERT,, Cincinnati. (*Journal American*



*Med. Association*, February 10, 1899.) The infection followed the removal of a posterior hypertrophy of the right side of the nose (by what method is not told) in a woman of frail physique, but good health and with no history of previous ear trouble. The operation was followed by general septic infection, involvement of the right ear, the antrum and the mastoid cells down to the dura, with perforation of the tegmen and a large extradural abscess. After operation and complete drainage recovery followed. *Richards.*

**Otitis Media in All Grave Diseases of Infancy.**

POMEROY, E. H., M. D., Calumet, Mich. (*Boston Med. and Surg. Journal*, January 18, 1899.) Dr. Pomeroy thinks otitis media in infancy much more common than has been supposed. He quotes in detail the statistics of Ponfick, who made 100 autopsies on children and found only 9 normal ears; death having occurred from various diseases. Ten cases only having been diagnosed as otitis media alone, or with acute bronchitis. The manner of infection and the resulting pathologic processes are briefly considered. The infection usually takes place via the eustachian tube; once infected, this tube readily closes and the middle ear becomes changed into a good incubator for bacterial growth and a generator of bacterial toxins. The author cites five cases of his own which illustrates the importance of considering the ear in all grave infantile affections. Case 1, five months bottle fed baby, convulsions, death. After death ears examined; left drum tense, clear fluid on puncture, right drum pus. Author believes child might have been saved had puncture of the drum been made earlier. Case 2, nine weeks old baby, continual crying, ears examined by five physicians including the author, without discovering any abnormality; puncture followed by liberation of three or four drops of pus, immediate relief and prompt recovery. Case 3, child seven weeks old, continuous vomiting for three days, temperature 105, no ear tenderness apparent, puncture of drum; one drop of pus liberated, temperature next day 98, prompt recovery. Case 4, child eighteen months, bronchopneumonia with diarrhea, no ear symptoms; puncture made because physical signs not exten-

sive enough to account for condition, pus from each ear, immediate relief. Case 5, child five weeks, profuse watery diarrhea, two or three drops of pus after puncture of right tympanum, immediate relief.

Before operating the ear should be thoroughly cleansed with sublimate solution and ether or chloroform anesthesia used in order that the examination and operation may be complete and satisfactory. A better appreciation of cases such as these where the ear is not apparently the principal organ at fault will save many lives. *Richards,*

**The Operative Treatment of Mastoid Inflammation.**

DENCH, E. B., New York. (*Laryngoscope*, October, 1899.) Examination of the statistics of the larger hospitals in New York City devoted to the special treatment of diseases of the ear showed that ten years ago the mastoid operation was rarely performed. During the last few years it has been performed almost daily. Another important fact was while in former years the treatment of intracranial complications of suppurative middle-ear inflammation was relegated entirely to the general surgeon, at the present day these operations were performed by the otologist. Regarding the indications for opening the mastoid process in chronic suppurative otitis media, it is the writer's opinion that the indications for the operation laid down by Schwartze many years ago were those followed at the present day. The only difference was that under improved surgical technique, by which perfect asepsis was secured, the surgeon did not hesitate to act on these indications immediately. For this reason the number of operations was relatively greater than in former years. The indications for operative treatment in this condition are: (1) Local tenderness over the region of the antrum, and (2) a sagging of the upper and posterior wall of the external auditory meatus close to the membrana tympani. When these signs exist operative interference is always indicated. Experience has shown that the temperature of the patient furnishes but little indication. Spontaneous pain might also be absent although the mastoid might have undergone extensive destruction. Many surgeons regard "tip tenderness" as an important diagnostic point. In the writer's experience

it has proven of but little value. Owing to the increased frequency with which the mastoid operation is performed it might be as well to consider any possible dangers which might arise in the operation itself. His own statistics show that out of 228 operations upon the mastoid process in no case could death be attributed to the operation. Where intracranial complications existed, operative treatment offered the only means of relief. In 13 cases in which thrombosis of the lateral sinus was present, death followed in but two cases. One patient died of acute nephritis, which was probably caused by ether narcosis. Of 14 cases operated on where there was an epidural abscess all recovered.

Regarding the radical operation for the relief of a chronic otitis media with involvement of the mastoid (the Stacke-Schwartz operation), 17 cases have been operated on. Of these 12 were cured and 5 improved. It can therefore be easily seen that the mastoid operation is not in itself a dangerous procedure if the rules of aseptic surgery are closely followed. No operation of this character should be performed without the strictest antiseptic precautions both as regarded the field of operation and the instruments, also the surgeon's hand. If proper care was taken, the exposure of the meninges, either in the middle or posterior cranial fossa, or exposure of the opening of the lateral sinus, did not increase in any degree the mortality of the operation. On the other hand the more extensive and radical the operation, the better the result. The surgeon who operated most frequently and most radically was really more conservative than he who waited for very pronounced symptoms. Regarding the technique, all details of preparation of the operative field should here be undertaken with strict surgical cleanliness. The primary incision should lie close to the line of auricular attachment and should extend from just below the tip of the mastoid to just above the external auditory meatus, the soft parts being divided down to the bone. In this manner a very narrow anterior flap was formed. The anterior flap was pushed forward by means of a periosteum elevator, exposing thoroughly the superior and posterior margins of the bony external auditory canal. All bleed-

ing points were secured by means of artery clamps. The next step was to sever the attachment of the sterno-mastoid muscle. This was best done by means of blunt scissors curved on the flat. The tendinous attachment of the muscle should be divided until the finger can be passed beneath the tip of the mastoid into the digastric fossa. In every case the mastoid antrum should be first entered. This applied not only to those cases in which perforation of the cortex was present near the region of the antrum, but also where spontaneous perforation had taken place into the digastric fossa through the internal plate of the mastoid. For removing the mastoid cortex he preferred either the chisel or the gouge. The bone should first be removed as close to the posterior wall of the bony meatus as possible and not above the spinum supra meatum. The opening in the bone should be gradually deepened until a probe can be passed through the mastoid antrum into the middle ear. The wound should then be explored by means of a probe to ascertain whether the bony walls are intact. After the mastoid antrum has once been entered, the topography of the process is evident. The entire mastoid cortex should then be removed by means of the chisel or gouge and the tip removed by the bone forceps. Great care should be taken to thoroughly curette the aditus and antrum so as to permit free drainage of the middle ear through the posterior opening. Experience has taught that the operator was inclined to do a less radical operation than was absolutely necessary. In later cases he has found not infrequently that the bone seemed almost normal. Close inspection, however, revealed the fact that it was a little congested and slightly dark in color. With reference to any possible accidents that might occur during the operation, these are of trifling importance provided aseptic treatment was carried out. One should never operate upon a case without expecting to expose or open the lateral sinus or to enter the cranial cavity. The exposure of the sinus in doubtful cases is imperative, and if its appearance is not perfectly normal, a free incision should be made into the vessel. No harm could possibly result from this procedure, and many a life which would otherwise be lost might be saved by what was apparently a radical and uncalled for procedure.

**The Petro-Squamosal Sinus—Anatomy and Pathologic Importance.**

CHEATLE, A. H., London. (*Laryngoscope*, October, 1899.) As little or nothing is written in even the best works concerning this sinus, which has most important connections with the middle ear both from anatomical and pathological standpoints, the writer has thought the subject of sufficient interest to bring before the Congress. The following British authors have written upon the subject: J. F. Knott, of Dublin (*Journal of Anatomy*, Vol. xvi, page 27), who quotes C. Krause, Luschka, Otto and Sir Charles Bell, Henry Morris (*Anatomy*, page 661), Professor MacEwen ("Pyogenic diseases of the Brain and Spinal Cord," pages 2 and 8), and Quain (*Anatomy*).

**COMPARATIVE ANATOMY.**

In some lower animals, dog and calf for instance, this sinus runs across the roof of the middle ear making its exit by means of a large foramen between the base of the zygoma and the bony meatal wall, and serves almost entirely for the exit of the intracranial blood, taking the place in fact of the sigmoid portion of the lateral sinus.

In higher forms of monkeys, such as the chimpanzee, gorilla and ourang outang, the sinus closely resembles the human.

In the *Macacus* group the young often have the groove which runs along the petro-squamosal suture, and the anterior external opening well marked; while with the adult the opening is usually closed or rudimentary, leaving the groove which runs forward to the foramen spinosum. In other varieties, notably in Baboons, *Chrysothrix*, *Cebus*, *Midos*, *Habule*, *Lemuridæ* and *Indri*, both the groove and the external opening are well marked, the latter piercing the bone between the large post-glenoid tubercle and the bony meatus. In these the sinus does not take the place of the sigmoid portion of the lateral sinus as it is also present and well marked.

**HUMAN ANATOMY.**

In early fetal life, before the formation of the internal jugular vein, the petro-squamosal sinus carries all the intracranial venous blood emerging in front to open into the primitive jugular (afterwards the internal jugular). It

is not to be wondered then that this channel which serves such important duties in early fetal life should persist in some form or another in later life. The anterior opening usually closes, the sinus or its remains at its anterior extremity forming a connection with the middle meningeal vein. The sinus dwindles to a small size, while the opening into the lateral sinus often persists.

With regard to the persistence of the anterior opening in front of the meatus in adult life, the writer examined 2,585 skulls in the Royal College of Surgeons' Museum, and among this number found in 23 rudimentary remains, 3 in the glenoid cavity, 3 in the zygomatic process itself, 6 in the base of the zygoma, and 11 just external to the Glaserian fissure, with sometimes a fine groove running outwards and occasionally bridged over by the junction of the post-glenoid tubercle with the bony meatus. It is the rule rather than the exception for remains of the sinus to be present in some form or another all through life. A statement supported by Mr. Arthur Keith and Mr. Cadman.

In infancy and childhood the sinus as a rule had a well-marked opening into the lateral sinus behind by means of a valve-like opening and in front joining the middle meningeal vein, while in adult life, although it is often marked, careful search has sometimes to be made. The absence of markings on the bone in the neighborhood of the suture does not by any means show that the sinus is not present. In infancy and early childhood, in the region of the posterior extremity of the suture, numerous irregularities are often seen; it is at this spot that a bridge often forms over the posterior end of the sinus before it opens into the lateral sinus, a common condition in the adult bone.

On looking at the roof of the middle ear in a fresh specimen after the dura mater has been stripped off, a network of rather large veins can be plainly seen immediately beneath the bone; from this network several veins emerge through the suture to empty into the sinus.

In children in which the interval between the suture is wide these are sometimes numerous, especially posteriorly. In the adult a fairly constant one is present on a vertical level with the membrane; or more may be present at inter-



vals. These emerging veins receive a fine covering representing the meninges.

Occasionally the openings of fairly large veins can be seen on the cerebral side of the sinus, especially at its anterior part.

#### PATHOLOGIC IMPORTANCE.

It is therefore seen that there is a connection between the veins of the middle ear and those of the meninges and occasionally, at all events, with those of the temporo-sphenoidal lobe, and through the meningeal coverings the middle ear is in communication with those of the middle and posterior fossæ. Under these circumstances the importance of this sinus with its tributaries and connections, from a pathological point of view, is very evident and explains how infection may spread from the middle ear to meninges and brain without microscopical evidence of the connection. Such a state of things is not uncommon, as we all know, in infants and children, in whom the pathway we are considering is well marked and in whom the membrane may be intact. There is a specimen of mine in the museum, obtained from the post-mortem room from an infant, aged one year, who died of suppurative leptomeningitis, without a known cause, during an attack of pneumonia. The middle ear was full of pus containing all sorts of pathologic cocci. Cut sections of the emerging vein failed to show cocci, but this by no means precludes this as having been the pathway. There was no thrombosis. It is astonishing, in the face of this close connection of the middle ear with the meninges, that meningitis is not of more frequent occurrence. The explanation may be that the meninges, like the peritoneum, are able to deal with a certain amount of infection, and only when the dose is excessive, that this resisting power is overcome. This pathway will also explain the presence of a cerebral abscess without microscopic connection with the diseased middle ear. The sinus may be the pathway for septic thrombosis of the lateral sinus.

A. H. Cleveland, of Philadelphia, in the *Archives of Otolaryngology*, Vol. xxiv, p. 136, 1895, relates the case of a boy, aged 6 years, who died of pyemia. At the post-mortem the petro-squamous sinus was found abnormally large and



deep, being at one or two points almost entirely bridged over by bony processes. At its anterior extremity necrosis had taken place and pus had entered the sinus, causing a thrombus which extended backwards into the lateral sinus. Meningitis was present on the same side.

In St. George's Hospital Museum is a specimen of the dura mater with the lateral and longitudinal sinuses, from a man, who, after suffering with discharge of the right ear for three months, died with symptoms of meningitis. At the post-mortem examination suppurative meningitis was found over the right side with septic thrombosis of the lateral and longitudinal sinuses. A vein was found which made a direct communication between the tympanum and the lateral sinus and which would admit the passage of an eye probe.

It may be that we have here one of the pathways which will solve some of the unaccountable intracranial affections met with by the physician, such as the posterior basic meningitis of infants, cerebro-spinal meningitis and perhaps some cases of tuberculous meningitis.

It is taken from a section of the lining membrane of the middle ear of an infant who died of tuberculosis meningitis and general tuberculosis. Tubercle bacilli can also be seen in another section.

**Extension Massage of the Ossicles with a New Aural Masseur.**

STILLSON, HAMILTON, Seattle. (*Journal American Med. Association*, January 20, 1900.) An electric masseur differing from many forms of aural massage apparatus in use in that vibrations of the membrane and ossicles can be attained while they are already in a state of tension. This is brought about by means of a rubber bulb connected with the nozzle inserted in the meatus. "The instrument first puts the offending sclerosed tissues on the stretch and then more or less rapidly jerks them loose, so to speak." The tension can be made inward if desired. Many old sclerosed cases have improved under this treatment.

Richards.

**Therapy of the Tympanic Mucous Membrane.**

GOLDSTEIN, St. Louis. (*Laryngoscope*, December, 1899.)

The author advocates conservatism in the treatment of chronic middle-ear affections. Mastoid and intra-tym-

panic operations are frequently undertaken where patience and care in the application of less radical measures are available.

An interesting bacteriologic point was discussed in that micro-organisms can be harbored within the confines of the middle-ear cavity for so long a time without giving rise to a further extension of the inflammatory process. Suppurations of the middle ear are frequently found which have existed for years without much indication of tissue destruction, or disturbances to the patient. Micro-organisms find an especially favorable habitat on mucous membrane, and this suitable culture medium, supplemented by the moist serous surface and fairly uniform temperature of the tympanic cavity afford the best possible opportunity for the rapid spread from an infected focus. Over 70 per cent of suppurative affections of the tympanic cavity are due to an extension and infection from the naso-pharynx to the Eustachian tube. Through this portion of the mucous tract and extension to the tympanic cavity is rapid; conversely, in chronic suppurative infections of the middle ear an extension to the attic, antrum and mastoid is slow. It will be interesting to determine the reason for this decided difference of the same micro-organism to spread; on the one hand the rapid spread through the naso-pharynx via Eustachian tube to the tympanic cavity; on the other the slow progress from the tympanic cavity via attic and antrum to the mastoid cells.

Preference is given to the "dry treatment" in suppurative otitis media, and the promiscuous use of the syringe decried. Numerous reasons and opinions are advanced in setting forth the disadvantages of the frequent use of the syringe and lavage, and the author concludes with the claim that this form of treatment is contraindicated in active suppurative cases where large perforations of the membrana tympani exist, and where free entrance of the syringing fluid into the tympanic cavity is so easily effected. The statement is offered that many of the cases requiring mastoid interference or ossi-culectomy have been unconsciously produced by the too liberal use of the syringe in cleansing the tympanic cavity.

The indiscriminate use of the nasal douche, especially when handled by the patient himself, is commented upon and subsequent infections of the tympanic cavity as the result of this procedure is pointed out.

The Eustachian catheter is liberally used in connection with a nebulizing or vaporizing apparatus in chronic suppurative otitis media to accomplish the three-fold purpose of inflating the middle-ear cavity, of clearing the tympanum of pus and of medicating the middle-ear cavity from within.

Inflation of the middle-ear cavity is accomplished by a steady current of air, continued five minutes at a time, in conjunction with a nebulizing apparatus and Eustachian catheter. Long standing cases of suppurative otitis media have yielded to this treatment where all other methods have failed.

Where the discharge is profuse, the above method of treatment is supplemented by a gauze packing, selecting narrow strips of plain sterilized gauze for this purpose.

Medicated liquid petroleums are extolled in the treatment of chronic non-suppurative catarrh of the hypertrophic form and have even been found of therapeutic advantage in mild sclerotic otitis media.

A special feature of this paper is the intra-tympanic injections of medicated liquid petroleums. Applications to the tympanic cavity are made as follows: A short hard rubber Eustachian catheter is introduced in the usual manner and snugly fitted into the naso-pharyngeal orifice of the Eustachian tube, the tight fit being necessary to avoid leakage at the tip of the catheter when the fluid is forced into the tympanic cavity. A glass-barrel syringe, two inches in length and one-half inch in diameter, supplied with a cone-shaped tip is tightly applied to the distal end of the catheter. The syringe is loaded with a solution containing iodine, 3 grains, carbolic acid, 4 grains, benzoinol or albolene, 1 ounce. When the catheter and syringe are properly adjusted, the patient's head is tilted well backward and inclined toward the ear to be medicated. The piston is pressed home slowly, and in the majority of cases, after six or eight drops have been delivered, the patient will state that he feels an unusual

fullness in the ear. The syringe is then adjusted to the cone-shaped tip of the compressed air apparatus; a few short taps, and then a steady pressure continued for eight or ten seconds is given. This insures the penetration of the tympanic cavity by the fluid.

The above technique is applied either alone or in conjunction with some form of pneumatic massage of the membrana tympani.

**Naso-Pharyngeal Adenoids as a Causative Factor in Ear Diseases.**

HAIGHT, ALLEN T., Chicago. (*Journal American Med. Association*, December 23, 1899.) From his experience in hospital and private practice he regards naso-pharyngeal adenoids as the main factor in producing both suppurative and non-suppurative inflammatory conditions of the tympanic and Eustachian mucous membranes. They produce inflammation of the middle ear by constant irritation from pressure and by blocking more or less completely the orifices of the Eustachian tube, by their injurious effect on the general economy of the child, particularly the nerves of special sense and by leaving a post-nasal catarrh as a sequel which sooner or later establishes some form of middle ear disease. The sufferers from this trouble are shallow breathers and their blood is not sufficiently oxygenated. This excess of carbonic acid in the blood causes the lassitude, headache, stupidity and general dullness of sense so frequently found where adenoids are present. In an examination of 26 deaf mutes made by the author only 4 were free from postnasal adenoids. Many feeble minded children suffer from adenoids and the author thinks there are many children in institutions over the world who could possibly be restored to usefulness by the removal of the adenoid growth. The statistics of many showing the proportion of ear troubles, acute and chronic, due to the adenoids is given. As is well known, the percentage is a large one.

Operation should be done as soon as the condition is recognized and by any satisfactory curette of the cutting type, but not by the chemical or thermo-cautery. Under twelve years of age the author prefers anesthesia with bromide of ethyl; after that age local anesthesia.

*Richards.*

**A New Treatment For Chronic Catarrhal Inflammation of the Pharynx Connected with Diseases of the Ear.**

GRAZZI, V., Florence. (*Journal of Laryngology.*) After referring to the frequency of chronic catarrhal pharyngitis and the inefficiency of all the methods hitherto proposed for its treatment, the author discussed the varieties and different degrees of the affection. He exhibited some microscopic preparations in order to show the normal structure of the pharynx, and the alterations produced in it by chronic catarrh with hypertrophy of the adenoid tissue. The structure of the pharynx itself suggested to him the method of treatment under consideration—a method which consists in the compression or crushing of the diseased tissues. Consequent on these manœuvres, repeated more or less frequently, the tissues become less inflamed, the granulations are reabsorbed, the function of the glandular tissue is re-established, as well as the circulation in the bloodvessels and lymphatics.

Professor Grazzi carries out this treatment by means of small metal probes bent at a more or less obtuse angle, the small probes ending in a kind of fork into which are fixed small rollers. These are pressed up and down on the pharynx with more or less force, according to certain indications mentioned by Dr. Grazzi, and have been found very useful in certain cases where the disease had spread to the middle ear.

**Diagnosis and Treatment of Middle Ear Diseases.**

FARBER, J. H., Dayton. (*Journal American Medical Association*, December 23, 1899.) The author makes the statement that "chronic hypertrophic rhinitis and more or less stenosis from spurs or deflected septum have nothing whatever to do with causing any form of aural trouble," and attempts to prove this by the fact that: "All specialists meet with stenosis, spurs, hypertrophy of turbinates extending into the posterior nares, and large soft pharyngeal tonsils in which there is absolutely no involvement of the ear, consequently if they were causative factors, these obstructions could not exist except when complicated with aural troubles, while many cases of acute and chronic aural troubles are seen in which there

are neither obstruction, hypertrophy of turbinates, nor enlarged or soft pharyngeal tonsils." (The reviewer does not regard the argument as a sound or a convincing one. It is also opposed to the practical experience of the majority of rhinologists and otologists.) Curiously enough the author says "while not admitting cause—except in adenoids—I always try to correct these nose and throat defects."

He regards tinnitus as always due to more or less ankylosis of the joints of the ossicles with each other and of the stapes to the oval window. He punctures or removes the drum and says the noise stops in nearly every case. If it does not stop it is because there is firm ankylosis or retraction of the drum and the hole does not admit the waves against the inner wall and the drum and ossicles still receive the vibrations.

*Richards.*

**The Diagnosis of Anterior Abscesses of the Mastoid, and of Furunculosis of the External Auditory Meatus.**

BARR, LOUIS, Nice. (*Journal of Laryngology.*) Otolologists are agreed that they sometimes find it difficult, if not impossible, to make a diagnosis between abscess of the limiting cells of the mastoid process and furunculosis of the meatus externus. In such cases a reasonable diagnosis can only be made from deductions drawn from a perfect acquaintance with the anatomy and physiology of the region, and at the same time from the general aspect and progress of the case. The following deductions may be drawn:

1. That early lymphangitis and periauricular adenitis are the rule in all furuncular affections of the meatus, and are late and exceptional in purulent inflammations of the limiting cells. This is consequent on the difference between the lymphatic systems of the external and middle ear.

2. That perimastoid edema effaces the retro-auricular depression in furunculosis, whereas in mastoiditis the retro-auricular depression persists and remains circumscribed.

3. That the pharyngeal plexus may become visible through venous stasis induced by the mastoiditis.

4. That, in consequence of the different innervation of

the tympanum and the meatus, spontaneous pains and sensitiveness are more acute in furunculosis; they are less marked in general in anterior abscess of the mastoid.

5. That also, for neurologic reasons, in inflammation of the anterior cells facial paresis is sometimes observed, as also an exaggeration of the sense of taste, and a peculiar sensitiveness of the pharynx and end of the tongue.

6. That the bacterial nature of the pus is different in the two diseases.

7. That, in the absence of any febrile condition, a continuous disproportion between the pulse and the temperature is in favor of the mastoiditis.

#### **Exostosis of the Right Auditory Meatus.**

RUTTEN, Namur. (*Journal of Laryngology*.) The osseous anomaly was remarkable for its larger size. It measured 15 millimetres in length, and 12 millimetres in thickness. It filled the external meatus so completely as to prevent the introduction of the very smallest probe between the cell and the tumor. Besides, by its compressure, the excrescence had destroyed the skin and caused an osteo-periostitis of the canal. This secondary suppuration, complicated by the retention of pus in the middle ear with the commencement of cerebral symptoms, compelled the patient to let himself be operated upon.

The exostosis is remarkable, in addition to its extraordinary size, for the long time it had been in the ear without causing any trouble. Its slow development had taken place unperceived. The patient was thirty-eight years of age at the date of the operation; he was a cooper by occupation, had served in the army, and had never suffered from running from the ear. Seven years before the operation he had consulted Dr. Rutten for deafness. At that moment the exostosis already completely obstructed the meatus, and the patient was much astonished when he touched with his little finger a hard body which was only distant a few millimetres from the entrance to the ear. He had never suspected its presence. At that date the operation proposed was declined, although the dangers of suppuration were pointed out, complications which, as a matter of fact, set in seven years later. One might



therefore safely say that the tumor had been fifteen to twenty years in developing.

The exostosis, of the consistence of ivory, was pedunculated. It was covered with a thin transparent skin, and was implanted on the postero-superior wall, occupying the whole bony part of the canal. Under an anesthetic it was removed with the gouge, without turning down the auricle. The result of the operation was immediate restoration of hearing and cure of the otorrhea.

**Effects of the Exanthematous Diseases on the Ear.**

BELLOWS, H. P. (*New England Medical Gazette*, February, 1900.) Scarlet fever, measles and small pox are considered, while roseola, r  theln and varicella are not thought to have any specific effect on the ear. The scrofulous and tuberculous type is more liable to aural complications and the intensity of the process is usually in direct ratio to that of the disease causing it. The channels of infection are by extension via the skin and via the Eustachian tube and through the general blood channels; the latter rare. The middle ear is usually affected and the inflammation is a suppurative one; the process may be rapid and virulent with destruction of the drum-head and involvement of the neighboring bony structures. The resulting destruction is so great and the damage so apt to be permanent, especially after scarlet fever and to a lesser degree after measles, that an attempt should be made in all cases to prevent and lessen the aural complications. Throughout the course of these diseases the possibility of ear involvement must be constantly in mind and a prompt and free incision of the drumhead made at the first sign of trouble. The subsequent drainage of the ear is to be provided for and it is an important part of the treatment.

*Richards.*

**Twentieth-Century Prognosis in Chronic Catarrhal Deafness.**

SNOW, SARGENT, Syracuse, N. Y. (*Journal of Laryngology*.) The unfavorable but time-honored prognosis given chronic catarrhal deafness has made it a subject rather shunned by modern writers, but the importance and frequency of the problem impelled him to place before the Sixth International Otological Congress a few of more hopeful conclusions born of his personal experience.

For many years this affection has baffled the skill of foremost otologists, each apparent success being overcome by the progressive nature of the disease, until gradually it has taken a place in the list of non-preventable and incurable maladies; even now it does not seem safe to assume that those almost totally deaf can be improved, but otologists must admit that recent advances have changed our prognosis in other conditions. Why not in that great body of chronic catarrhal cases where, for instance, words in a forced whisper can still be heard 10 inches or better?

Anatomic and physiologic study has shown the intimate relation of the nasal and aural membranes both by continuity and sympathy; what benefits one is in the right line to benefit the other, whether we have to deal with a hypertrophy or a sclerosis. The reason we still have so many failures is that either we have overlooked some point of obstruction or contact in the upper portion of the nose that is acting as an irritant, or we should go further, and advise our patients to submit from year to year, if necessary, to hygienic care and a tonic treatment with stimulating vapors to the tube and middle ear.

Of late we have been led to expect too much from purely nasal operative work, when with 80 per cent. of such cases recurring catarrhal inflammations yet remain as an important causative factor. In early adult subjects, where the deafness is of only one or two years' standing, it is true that the removal of turbinate pressures, ethmoidal disease, or adenoids may be followed by good results without special attention being made to the middle ear. But with those cases giving a history of five, ten, or twenty years' impairment of hearing, we are sure to find that the inflammatory action within the ear and Eustachian tubes will continue if we do not also institute a thorough and persistent course of after-treatment.

Chronic catarrhal deafness is a preventable disease. In every one of these patients we will find, besides their nasal trouble, some functional disorder or an habitual and gross transgression of Nature's laws. Unseasonable clothing, improper diet, poor portal circulation, warm baths, exposure to drafts night or day, and too little arm exercise

are among those most prominent, and it is against these our great fight has to be made. He says "great fight," for here our judgment and skill are most taxed; these errors must be corrected, their surface reaction improved by cold baths, and each habit scrutinized, for when membranes have once been in a state of chronic congestion, dietary and other excesses or the taking of a slight cold will produce a profound impression on the already weakened bloodvessels.

A few patients afflicted with chronic otitis media give no history of nasal trouble, but we will invariably find the post-nasal or Eustachian membranes in some stage of inflammation or atrophy, frequently pale and relaxed, but very sensitive. This class needs little operative work, but the parts require stimulation. Their life must be looked into, and so regulated that they are better able to resist colds and throw off congestions; even those showing sclerotic states are capable of some improvement.

Assuming that our patients are sensible and intelligent people, it is just and expedient that we go quite into detail in explaining Nature's method of repair, and the different steps of treatment. No further encouragement or promise is necessary if we make the points clear. An ignorant, unreasonable patient is not a favorable one, for he fails to appreciate the obstacles to be overcome, and the great need of regular and careful attention. I believe that our best policy is to be honest. Surrounded as these people are by bad climatic influences, and tempted by the good things of life to an unhealthful indulgence, we do wrong to encourage them in thinking that they will have no relapses; but we can assure them that their relapses will be much more tractable and easily subdued if their membranes have once been relieved of abnormal conditions.

To get favorable results in chronic catarrhal deafness, it is absolutely necessary that we, first, do most thorough nasal work; second, study habits and environment, correcting all that tend to induce recurring congestions of the membrane; and third, give persistent treatment to the middle ear and watch the general health.

When all removable causes have been taken care of and the parts healed, a vapor of camphor and iodine by inter-

rupted jets applied through the Eustachian catheter serves well the treble purpose of strengthening relaxed or atrophied membranes, increasing ossicular mobility, and absorbing inflammatory products. These treatments should be gauged according to the individual case in hand. Some every day, some twice a week, but each with the most particular care, using the auscultation-tube to make sure that the vapor reaches the tympanic cavity until the relaxed bloodvessels are toned up, and we cease to get more improvement in the hearing.

A rest from active treatment can then be permitted, but the patient should be instructed to report again as soon as an increase in deafness is noted. These periods of rest may become longer and longer until three to six months are allowed.

An interesting feature is that, many times after these periods of rest, we can press the improvement further than at our previous attempts seemed possible, and to a point where the disease is surely under control or good hearing established. Protracted effort with the stimulating vapor is a great aid in this last portion of the treatment, and we find that Nature's power to regenerate membrane and function is truly wonderful if tonic applications are steadily made.

Chronic catarrhal deafness in itself is not so formidable a disease, but the fact that the patient is adding to it so many days in each year is why we are baffled.

We must not expect too much improvement in hearing during, or soon after, the nasal operative stage, for there may still remain very sensitive nasal and tubal membranes, dependent often on some disorder of the general system that requires careful attention before we can get vapors well into the middle ear; but if we keep courage and follow the above plan we will find that 80 per cent. of those that have been given an unfavorable prognosis, because they failed to improve from a six or eight weeks' course of sprays and inflation, can be taken up and very satisfactory results obtained.

**Sarcoma of the External Auditory Canal.**

CONNAL, GALBRAITH, Glasgow. (*Journal of Laryngology.*)  
Malignant tumors of the ear are rarely met with. Of the

two forms of malignant disease, sarcoma of the ear is more uncommon than carcinoma. On looking over the statistics of the Glasgow Ear Hospital for the past twelve years, I find that in an aggregate of nearly 15,000 cases malignant disease is noted as occurring six times, once in 2,500 cases, four times epithelioma, and twice sarcoma. These figures nearly agree with those of Bürkner, which are often quoted. More recently Asch, in 1896, in reporting a case of sarcoma of the auricle, mentioned that he had found only ten cases of sarcoma of the ear described in literature.

Of the two cases of sarcoma which have occurred at the Glasgow Ear Hospital, one was reported by Dr. Barr in the *British Medical Journal* for October, 1897; the second is the case submitted.

These two cases were in marked contrast in the way they developed. In Dr. Barr's case, where the sarcomatous mass originated in the middle ear, there was no external growth, and the symptoms latterly pointed to some intracranial mischief suggesting temporo-sphenoidal abscess. In the present case, where the sarcoma originated in the external auditory canal, the development of the tumor was outwards, and gave rise to a large swelling in front of and behind the ear.

The patient was a girl six years of age. About eight weeks before she came to the hospital, her mother noticed a small growth—said to be quite painless—in the external auditory canal. A portion of this growth was removed by the family medical attendant, but it quickly recurred, and afterwards pain was persistent and severe. Facial paralysis set in seven days later and persisted. There was no history of purulent discharge from the ear.

Inspection showed a grayish-looking mass occupying the external meatus. It was exceedingly painful to the touch, and with the probe it was found adherent along the posterior wall of the canal. There was slight matting of the tissues in front of the ear over the parotid, and the gland at the angle of the jaw was enlarged. As already mentioned, there was marked facial paralysis on the same side.

Under chloroform the whole mass was curetted from the

wall of the canal. The tympanic membrane was found destroyed, and the bone on the inner wall of the tympanum denuded of periosteum. This gave relief from pain, she slept well, and put on flesh. But in about a month's time the growth recurred, and rapidly involved the mastoid region and the tissues in front of the ear. The great involvement of these regions by the extension of the tumor outwards was seen from the photographs.

The patient died seven months after her first visit to the hospital. No post-mortem examination was allowed.

Sections of the tumor showed a spindle-celled sarcoma, with the sarcomatous growth extending along underneath the epidermis.

These malignant tumors of the ear, though rare, are very interesting. A point of practical importance lies in the diagnosis. As we know, sarcoma is apt to manifest itself in the earlier years of life, at a time when we often meet with polypi and granulations in the external auditory canal as the result of neglected purulent otitis media. Excessive pain should always excite suspicion of malignant mischief, and lead to a microscopic examination of the tissue. So far as he has examined the literature on the subject, excessive pain is the prominent symptom. If in addition to pain there is marked and rapid recurrence of the growth, with glandular involvement, we have a group of symptoms which should make one careful as to the diagnosis and prognosis.

In the present case the excessive pain, and—what was very marked—the grayish look of the tumor, which was unlike ordinary granulations, the intimate adherence of the tumor to the posterior wall of the external auditory canal, the matting of the tissues in front of the ear, the glandular involvement and the facial paralysis—these, apart altogether from the history of the case, presented a clinical picture which at once arrested attention, and led to a microscopical examination of the tissue being made, when the diagnosis of sarcoma was confirmed.

**Epilepsy of Aural Origin.**

LANNOIS, Lyons. (*Journal of Laryngology.*) The writer gave the history of a patient, aged twenty-six, of tuberculous inheritance, but without any pulmonary

symptoms, who was attacked with double otorrhea at the age of seven, and epilepsy at the age of thirteen. When he presented himself for treatment in April, 1897, he had, as a rule, an epileptic attack every week. One ear had cicatrized, and had been dry for some time. The other ear was still suppurating, the drum entirely destroyed, cicatrizing in part but with two ulcerations below and in front. Cure was obtained in a few weeks, and the hearing for the watch, which had been only on contact, improved to 25 centimetres. At the same time the epileptic attacks disappeared, and in March, 1899, the patient returned of his own accord to say that he had remained cured ever since, and that his ears were quite dry. During the year 1898 he had only had two slight attacks of vertigo, the last being in the month of August.

Cases like this, where the action between the otic lesion and epilepsy appear well marked, are very rare. It is this fact which gives the interest to the case, and shows the importance of treating the ears when they are affected in epileptics.

— A Case of Cerebral Abscess Consequent on Acute Suppurative  
Otitis Media.

MOURE, E. J., Bordeaux. (*Journal of Laryngology.*) When the patient presented himself for examination he complained of very acute pain, which had set in on the seventh day of his disease. In addition he had vertigo and depression, but no vomiting, and no interference with speech; the mind was clear, and the temperature was normal. On the other hand, he had right homonymous hemianopsia, and word-blindness with aphasia and verbal amnesia. These symptoms were confirmed by Professor Pitres, who made the diagnosis of cerebral abscess in the neighborhood of the curved convolution.

In presence of these distinct cerebral complications, Dr. Moure operated on January 4, 1899. The bone was congested, the mastoid process being full of fungous granulations right up to the tympanum. A free communication between the antrum and the tympanum having been made, it was seen that the roof of the antrum was necrosed, and that a small hard sequestrum separated the cavity from the brain. This sequestrum was removed, no pus escaped,



and the meninges appeared healthy. As the diagnosis indicated an abscess of the brain situated in the region of the cuneus, an opening was made in the upper part of the temporal bone at about  $3\frac{1}{2}$  centimetres above the auditory canal. The opening into the skull measured about 3 centimetres in diameter. A crucial incision was made through the dura mater and the pia mater, producing slight hemorrhage, which was easily arrested by compression. A fine bistoury was thrust about 3 centimetres backwards and a little upwards into the cerebral substance, but this puncture was immediately followed by a considerable spurt of blood, as if the sinus had been widely opened. Compression with gauze was maintained for some time while the antrum and tympanic cavity were being dressed. When this was finished the cerebral compress was removed, but the hemorrhage recurred so abundantly that it was impossible to continue the operation. A plug of gauze was therefore placed at the opening into the brain, and the hemorrhage was easily arrested in this way.

Next day the general condition was good, the patient talked freely, but had paraphasia, and the general sensibility was almost abolished on the side opposite to the lesion. The right arm was also somewhat paretic.

A few days later the patient was again anesthetized, the plug was removed, and it was then easy to see that the pulsation of the brain was normal. The skin was joined in order to avoid cerebral hernia, and a piece of gauze was left in the brain.

On January 10 the sensitiveness had returned, the general condition was good, and there was no fever. Dr. Moure was obliged to be absent for some days, and the patient was dressed regularly until January 15, when the dressing was found saturated with pus which had run even on to the shoulder of the patient; in fact, the cerebral abscess had emptied itself by the orifice made through the brain. The hemianopsia had disappeared. A rubber drainage tube was placed in the cavity. Improvement went on until January 24, when the patient complained of the dressing hurting his head, and on removing it a cerebral hernia was found of the size of a small Tangerine

orange. On January 28 the patient became comatose, and died suddenly in the evening.

At the post-mortem it was easy to see that there was an abscess which had opened externally, and which opened into the ventricle, causing the patient's death. The abscess, in fact, was found at the level of the curved convolution, but it was not surrounded by a limiting membrane, so that the flow of pus was followed each time by a certain quantity of cerebral material, and hence the ulcerative process which had unfortunately caused the death of the patient.

The case is interesting because of the considerable hemorrhage which followed the puncture of the brain, and which was probably the result of opening a very congested vein—a vein which probably accompanied a deep cerebral sulcus. It is also interesting because of the slight symptoms of reaction which followed this abundant hemorrhage and the consequent plugging. Finally, the case proves once again that abscesses of the brain are always serious when they have no limiting membrane, and that when in doubt it is preferable not to make any injections.

**A Case of Panotitis: Cerebral Complications: Death: Post-Mortem.**

DELIE, Ypres. (*Journal of Laryngology.*) A patient, aged forty, presented all the symptoms of chronic inveterate neuralgia of the right trigeminal. Deafness declared itself, and was found to be due to an exostosis of the right external auditory canal. An operation restored his hearing, but produced no change in the right hemicrania. A few days later symptoms of acute mastoiditis declared themselves, accompanied by vertigo, and a hardly perceptible otorrhea. A Stacke's operation showed the only lesions to be purulent infiltration of the external wall of the apophysis, and a small polypus in the attic. The patient died comatose a few days afterwards.

At the post-mortem examination the following lesions were discovered:

A purulent infiltration in the bony roof of the right middle ear.

Acute meningitic lesions limited to the anterior surface of the bulb, spreading from the side of the affected ear to the inner third of the cerebellum, and compressing on the

left side all the meninges which covered the left side of the cerebellum. There was pus in the fourth ventricle and in the left lateral ventricle. The left ear was free from any pathologic lesion, and the same could be said for all the other parts of the endocranium and its coverings, as well as for the skull.

**Acoustic Exercises for Deaf Mutes.**

A. COSTINIU, Bucharest. (*Laryngoscope*, January, 1900.) For these exercises the voice is used and also a variety of instruments (trumpet, drum etc.) The limit of the hearing distance for these is from 20 to 30 meters. The method employed is similar to that described by Urbantschitsch. The speaking voice is used in varying intensities. Hearing tubes are seldom employed as they are found to change the quality and character of the transmitted voice.

These exercises are undertaken by different members of the family to obtain the advantage of a variation in the voice for the patient.

In beginning these exercises the patients are drilled on one or two vowels per sitting; these sittings are repeated two or three times a day each of fifteen minutes duration. When the patient gives evidence of hearing the vowel clearly and can repeat it distinctly, other vowel sounds are added; then follow consonants, monosyllables and finally words and phrases. During these exercises the instructor sits at the side of the patient so as to accustom his hearing without looking at the speaker. When the patient has become familiar with lip-reading, the exercises are conducted so that the lips and mouth of the instructor cannot be seen.

When the patient is familiar with several vowel sounds before these exercises are undertaken a confusion in the interpretation of these sounds frequently occurs. To overcome this the individual vowel sounds which are badly heard are persistently repeated until the hearing becomes more distinct.

It occasionally happens that a patient who has progressed even to the point of hearing words and sentences may suddenly in the course of twenty-four hours have a sudden relapse. Under these conditions it is necessary

to begin again with the individual vowel sounds and progress as before.

Women take more interest in these exercises than men.

Certain nervous phenomena are occasionally observed and these gradually disappear as the exercises are continued. All of his patients were cases of acquired deafness and careful testing indicates some degree of hearing of the spoken voice. Where these traces of hearing do not exist the results of this acoustic training are much less satisfactory than in patients who still possess some remnant of voice hearing.

Together with these exercises catheterization of the Eustachian tube and Politerization is also undertaken.

At the result of the work, ten patients can hear the spoken voice at more than one meter and the instruments at more than forty-five meters and they are able to hear and repeat entire phrases. Great observation is necessary both on the part of the instructor and of the patient and at a period of time varying from ten months to two years and even more, before satisfactory results can be obtained. Even then it remains to be seen whether these results are permanent.

**Intra-Tympanic Injections of Polocarpin in the Treatment of the Middle-Ear Sclerosis.**

FISCHERICH, Wiesbaden. (*Laryngoscope*, January, 1900.) The author reports satisfactory results following the injection of polocarpin into the tympanic cavity in 120 selected cases of well marked middle-ear sclerosis treated during the past four years.

The method, in brief, is the following: A 2 per cent aqueous solution of polocarpin hydrochlorate is injected into the tympanic cavity by means of a flexible tympanic catheter passed through a metallic Eustachian catheter well up into the tube. He begins with 6 to 8 drops, gradually increasing to 10, 12, 14, 16 drops; the increase in quantity of the injecting fluid depends on: (1) The stage of sclerosis; (2) the absorption capacity of the tympanic mucous membrane; (3) the reaction, as evidenced by each individual patient.

Thirty to forty daily injections constitutes this course of treatment. In long-standing chronic cases; forty to fifty injections may be made.

The results in many cases have been surprisingly good, even after all other therapeutic measures have failed. The average improvement noted was a 2 to 10 fold increase of the hearing capacity prior to instituting this treatment.

The author observes the following data in the application of this method:

1. Hearing tests should not be made immediately following the course of injections, but after an interim of eight days, when all fluid and moisture in the tympanic cavity has been absorbed.

2. A further improvement in hearing is frequently demonstrable some time after the injections have been discontinued.

3. The improvement following a first course of injections is not always of a definite character, as a later course of such treatment frequently results in further improvement.

**On the Extraction of the Stapes, with Demonstrations of Histologic Preparations.**

POLITZER, Vienna. (*Laryngoscope*, December, 1899.) The simple mobilization of the stapes had only a temporary effect on the hearing. Where the improvement was more lasting it was due to a tearing of the adhesions. Better results were obtained by dividing the adhesions formed between the branches of the stapes and the walls of the niche of the fenestra ovalis. The operation of the extraction of the stapes was founded on an experiment with animals. It had been found that in birds and rabbits, after the extraction of the stapes, a new membrane was formed, closing again the fenestra ovalis. His own experiments on rabbits confirmed this fact, and, in addition, he found by microscopic examination that no pathologic changes were produced in the labyrinth. The operative extraction of the stapes in cases of the so-called sclerosis of the middle ear was, according to his experience, of no use, because his investigations had shown that the cause of the fixation of the stapes was a proliferation of bony tissue of the labyrinth, which even after removal of the stapes eventually closed up the fenestra ovalis.

The results of the extraction of the stapes in cases of

non-suppurative middle-ear catarrh with formation of adhesions were still too few for us to form a definite opinion of its value. In cases of chronic middle ear sup-puration a good number of observations had been made. The histologic examination of microscopic sections showed the following: On sections which passed through the nitch of the fenestra ovalis and vestibulum one saw the inner wall of the tympanic cavity covered by a granulated mucous membrane composed of round cells. This same granulation mass filled the nitch of the fenestra ovalis, and, passing forward from there through the labyrinth window into the vestibulum, filled out the whole cisterna persymphatica. This granulative tissue was firmly fixed with the utriculus and surrounded it on all sides. The wall of the utricle itself showed inflammatory thickening. In the horizontal semi-circular canal the connective tissue network was in a state of inflammatory infiltration invaded by round cells and intersected by dilated vessels.

More conspicuous changes were found in the cochlea. Here the inflammatory proliferations had entered both cochlea turns, reaching as far as the top, principally, however, in the scala tympana. It started mostly from the inversive of the cochlear canal and from the lamina spiralis and showed the same structure as the connective tissue proliferation in the vestibulum. Where the stapes had been removed either intentionally or accidentally during the performance of the radical operation, even when the immediate results had been favorable, still little was known about the ultimate results.

Tarse was of the opinion that the extraction of the stapes might be performed without danger to the hearing. But against the number of cases where the hearing was improved must be placed a series of cases in which it was destroyed. Prof. Politzer then cited a case which had come under his observations. This case, the first in which the labyrinth was histologically examined after the extraction of the stapes, was very important in securing the indication for the operative removal of the stapes. During the course of suppurative otitis media it showed the possibility of a spreading of the inflammation into the labyrinth, and might possibly be given as the explanation why the hear-

ing was impaired after the extraction of the stapes. He for one, therefore, was against the performing of this operation during the course of chronic suppuration of the middle ear. But when the suppuration had passed, and there were adhesions between the branches of the stapes and the niche of the fenestra ovalis, there was, he thought, a distinct future for the operative extraction of the stapes with view to improving the hearing. This opinion was based upon observations made by others and also upon a case which he has under his notice.

**Pneumo-Massage Under High Pressure.**

P. J. MINK, Zwolle. (*Laryngoscope*, January, 1900.) The chain of ossicles must be considered as a lever with the membrana tympani and the membrane of the oval window at its distal end. It is by this intermediary that the atmospheric air is placed in communication with the labyrinthine fluid.

The mobility of this intermediary, acting as a unit, exercises a predominant influence on the hearing. When the ossicular chain is stretched by the tension of the membrana tympani a considerable elasticity of this portion of the conducting apparatus is already produced.

From a physical standpoint the mobility of this mechanism possesses a value called the "Co-efficient of elasticity."

The decrease of mobility corresponds to an increase of this elasticity. The task imposed upon the aurist, where the transmitting apparatus is impaired, is to increase the mobility of the parts and thus decrease the "Co-efficient of elasticity."

To do this the general plan of massage has been that of an alternate rarefaction and compression, applied to the membrana tympani. This principle is a thoroughly rational one if we keep in mind that the massage movements must "exceed the limit of elasticity." It should be understood that this property of elasticity possessed by the drum membrane and ossicles must be overcome in order to obtain the greatest possible benefits from pneumo-massage.

Pneumo-massage as usually applied does not take this point into consideration, and from a mechanical standpoint, therefore, has heretofore not been applied to its



fullest possible extent. The favorable results following massage are due mainly to its influence on the impaired mechanism and the rigidity of the ossicles.

A force is necessary to first draw the chain of ossicles tense in order that the entire transmission apparatus may be brought within the influence of the massage. It is our purpose, therefore, to draw the drum membrane and ossicles to a constant tension by pneumatic pressure to the "limit of elasticity" and thus apply an alternate compression and rarefaction constituting the massage of these parts.

To determine the value of this technique, the author has observed the results in a series of cases where the pneumatic pressure has been raised in a slow and gradual manner as here described, with the following results:

1. Only a low pressure is tolerated by the normal ear without painful sensations.
2. Where the sound conducting apparatus is impaired, higher air pressure is comfortably borne.
3. The only exceptions to these rules are the various forms of acute inflammation, exceptional cases of attic suppuration, and atrophy of the mallus.
4. In cases of middle-ear sclerosis, constant and increased pressure is always tolerated to a greater degree than in the normal ear.
5. The close relation existing between the degree of sclerosis and the amount of pressure tolerated may frequently help to verify the diagnosis.

As the result of these observations it may be admitted that the painful sensations of this massage procedure may determine the "limit of elasticity" of the sound-conducting apparatus.

The treatment instituted is a simple and direct application of these principles.

A reservoir of air communicating with the ear by means of a rubber tube tightly fitted into the auditory canal, is compressed in a slow and gradual manner by the action of a screw. To one side of this apparatus a manometer is attached; the other side is supplied by a small pear-shaped rubber bulb.

The screw is turned, admitting an air current in the ear

until a painful sensation in the interior of the ear is produced.

Close attention must be paid to the application and the amount of pressure applied by this apparatus. Too strong pressure of the rubber bulb will be harmful, while on the other hand, if the pressure is too light it will not be effective. By paying strict attentions to the sensations experienced by the patient many harmful results may be avoided. A pronounced hyperemia of the membrana tympani is also observed, but this, however, is of little consequence. The time of application and the frequency of alternating compression and rarefaction of this apparatus depends upon the character of the case.

The results always obtained from this method have been very encouraging, and the subjective noises in the ear, and also the hearing of the patient have been materially improved.

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## II.—NOSE AND NASO-PHARYNX.

### **Schleich Anesthesia in Operations for Deflections and Spurs of the Septum.**

BAUMGARTEN, E., Budapest, Hungary. (*Fränkel's Archiv. IX, 3, 359.*) The author first paints the mucous membrane with a ten per cent. solution of cocain in order to introduce the curved needle of the syringe without pain and hemorrhage. The solution he now employs consists of sodium chlorid, 0.6, distilled water, 100.0, and eucain, 0.2. It must be distributed gently beneath the mucous membrane, lifting it in all directions and making a whitish wheal. If the deviation or spur is somewhat large, a second injection is made above or behind the first. If the patient appears to be sensitive, the point of the needle is shoved deeper into the tissues. Even when the lumen of the nose is nearly occluded, the needle can be insinuated behind the obstruction. The operator then waits a few seconds, meanwhile tamponning the needle puncture, if necessary. He uses a chisel corresponding in breadth to the size of the spur and a hard-wood mallet, which is preferably handled by an assistant. The hemorrhage is very

slight. If the chiseling is done in the front part of the nose there is no pain; when further back on a very hard spur, some pain is felt. In the last fifty cases treated in this way, the author was not compelled to stop operating on account of the patient's pains, but could finish, although some patients were frightened and pale. The chisel is held at different angles until a plane surface is formed, requiring but a few seconds, as the field of operation can always be seen. When the chisel is finally applied no resistance is felt, and the removed tissue hangs down by the mucous membrane posteriorly. This is removed by the scissors, and the upper and lower margins trimmed. The immediate hemorrhage is remarkably slight, but the secondary bleeding will be profuse if the nose is not packed carefully. The tampon may not be removed for twenty-four hours. Another disadvantage is the feeling of faintness towards the end of the operation. The packing can be kept from slipping into the naso-pharynx and nose by filling the end of the gauze tampon with cotton, and making a cushion of it. It must be renewed daily in some cases for a week. Patients object to iodoform (twenty per cent.) gauze in the nose, but no material can take its place in the first days. Deviations of the anterior part of nose are the most difficult to treat on account of the danger of causing a perforation. In these operations the author still makes a flap. When the spur is adherent to the lower or middle turbinal, Schleich anesthesia is also sufficient. It requires less time by this method to perform tracheotomy than to put most patients under the influence of a general anesthetic. If any suturing is done above or below the canula, a small dressing must be applied to guard against secondary hemorrhage. The vomiting which occurs during cocaine anesthesia is avoided by this method. The anterior end of the middle turbinal was removed in the same way in empyema of the frontal sinus. And the antrum of Highmore can be punctured or opened by drilling with hardly any pain  
Morgenthau.

**On Tuberculosis of the Pharyngeal Tonsil.**

LEWIN, LEON, Russia. (*Fränkel's Archiv. IX, 3, 377.*) In Brieger's wards in Breslau (Germany), the author made careful examinations in 200 cases. In nine, tuber-

culosis was found histologically. In three of these tubercle bacilli were discovered. The proof, however, of tuberculosis was brought in the case without bacilli by the even more decided anatomical appearances. In addition to these nine results, one attempt at inoculation was successful; making ten "latent" instances of tuberculosis in 200 cases examined. The sum total of all observations published is 905 cases with 45 tuberculous findings, *i. e.*, "latent" tuberculosis in about 5 per cent. of all hyperplasias of the pharyngeal tonsil. Statistics are, however, misleading until a greater number have been investigated. The author's first 40 cases, for instance were negative; then positive results followed in quick succession, while the last 50 cases were again negative. His deductions from his interesting and painstaking investigations are as follows:

1. In about 5 per cent. of the cases of hyperplastic pharyngeal tonsil tuberculous foci were found.

2. The tuberculosis corresponds essentially with the so-called tumor form of the tuberculosis of the mucous membrane; it is characterized by the absence of all externally recognized signs — "latent" tuberculosis of the tonsil.

3. This "latent" tuberculosis may, probably, be the first and only localization of tuberculosis in the body.

4. It is, however, usually combined with tuberculosis in other parts, especially in the lungs, even if this is not manifest at the time of operation.

5. It is found relatively frequently in pulmonary tuberculosis.

6. It may attack pharyngeal tonsils of normal size as well as hyperplastic ones. It is doubtful if the tuberculosis, possibly as the result of toxin, induces hyperplasia. It certainly can, however, retard the physiological involution of the tonsil.

7. It is of relative subordinate importance in the etiology of hyperplasia of pharyngeal tonsil.

8. It may be definitely eliminated by removal of the pharyngeal tonsil even if tuberculosis of the lungs is present at the same time.

*Morgenthau.*

**Fibrous Tumor of the Naso-Pharynx.**

INGALS, E. FLETCHER. (*New York Medical Journal*, Dec. 16, 1899.) An interesting case, which the author had under his observation for many years, showing a tendency to atrophy of a large fibrous growth of the nose and naso-pharynx, as the patient advanced in life.

*Seymour Oppenheimer.*

**The Relation of Pathologic Conditions in the Ethmoidal Region and Asthma.**

RICE, CLARENCE C. (*New York Medical Journal*, Nov. 11, 1899.) In the opinion of the writer asthma bears little relation to ethmoidal disease unless polypi are present, and mouth breathing with the resultant general catarrhal state causes the asthmatic seizure by vaso motor disturbances.

MacDonald is quoted to the effect that neither condition is dependent upon the other, but that both are the simultaneous expression of an inflammatory process, resulting in the polypus in the upper and the bronchial catarrh and spasm in the lower respiratory tract.

*Seymour Oppenheimer.*

**The Relation of Pathologic Conditions in the Ethmoid Region of the Nose and Asthma—Treatment.**

BOSWORTH, F. H. (*New York Medical Journal*, Nov. 18, 1899.) The author lays great stress on the appreciation of the connection between the respiratory function of the nose and the bronchial mucous membrane. The improper functioning of the one tends to the development of a pathological disturbance of the other. Reference is made to the intimate association of edematous hypertrophy, polypoid degeneration and nasal polypi with asthma. These affections are claimed to be manifestations of ethmoiditis. The removal of polypi cures the hay fever, yet fails to affect the asthma, unless more radical treatment is employed, such as the removal of the ethmoidal cells.

A large hollow middle turbinate projecting into the cavity of the nose pressing upon the septum, and distended ethmoidal cells crowding the middle turbinate upon the septum are the clinical evidences of ethmoiditis.

Occlusion of the orifices of these cavities results in polypoid degeneration of the mucous membrane and intracellular pressure, which in turn brings about, more par-

ticularly in individuals of a neurotic temperament, symptoms (sneezing, asthma, etc.), which may be designated as pressure signs.

For the relief of this condition, the burr driven by an engine, is preferred to the snare, as by this instrument the trabecular walls can better be broken down.

Polypi springing from the posterior ethmoidal cells in the superior meatus are uncommon as compared with the number originating from the anterior cells in the middle meatus.

The ordinary case of asthma associated with nasal polypi is regarded as curable, provided the ethmoid cells are thoroughly treated.

*Seymour Oppenheimer.*

**A Nasal Polypus Weighing an Ounce and Three Inches and a Quarter Long, Springing From the Septum Nasi of a Child of Twelve.**

COSTON, H. R. (*New York Medical Journal*, Aug. 5, 1899.) Examination of the pharynx revealed a growth protruding half an inch below the soft palate completely filling the nares anteriorly. At the time of the operation digital exploration showed the large tumor to be attached posteriorly to the septum within the right nasal cavity by a pedicle almost half an inch in diameter. To this same pedicle was also attached three other polypi an inch and a half long. The smaller ones were evidently lobulated portions of the main growth. Considerable external deformity was present. Under cocain anesthesia, the tumor was removed via the pharynx by manual evulsion, tearing it forcibly from its attachments. Little hemorrhage followed.

The author reviews the literature of nasal myxoma.

*Seymour Oppenheimer.*

**Hemorrhage Following Adenoid Operations.**

MARTIN, W. A. (*Laryngoscope*, July, 1899.) Three cases of profuse hemorrhage following adenectomy are reported by Martin. The hemorrhage was so severe that plugging of the posterior nares had to be resorted to.

*Seymour Oppenheimer.*

**The Relation of Pathologic Conditions in the Ethmoidal Region and Asthma.**

INGALS, E. FLETCHER. (*New York Medical Journal*, Nov. 11, 1899.) A brief report of several interesting cases

coming under the author's observation showing the different manner in which asthmatic paroxysms have been brought about. For example, the effect of odors and dust in different cases. Also the effect of mental fright.

*Seymour Oppenheimer.*

**Concerning Adenoid Vegetations in the Adult, Etc.**

JANKELEVITCH, Bourges, (*Revue Hebdom de Laryngologie*, 1899, No. 30.) Jankelevitch emphasizes the frequency with which one finds hypertrophy of the pharyngeal tonsil in the adult.

He points out the difference in symptomatology between children and adults suffering from this affection, and believes that in the adult reflex phenomena, for the most part of a neurasthenic type, are common.

Some of the symptoms complained of are stubborn cough with expectoration; constant irritation of the throat; affections of taste and smell. Some believe themselves to have a bronchial and pulmonary affection, are sleepy by day and sleepless at night. The pharyngeal tonsil like the other is subject to inflammations which are sometimes accompanied by symptoms which may easily confuse the physician unless he is watchful.

Cases of basilar meningitis and septicemia have been observed consecutive to abscess of the pharyngeal tonsil and acute inflammations are not at all uncommon.

The author reports a case exhibiting several features of interest. The patient had for a year suffered from a persistent cough, with occasional bloody expectoration and hoarseness. He was at the time of examination aphonic. His lungs were unaffected, and Jankelevitch discovered that the hoarseness came from crusts of dried mucus which covered the larynx, and the bleeding from a greatly developed and very friable mass of adenoid vegetation. Operation stopped the bleeding and the crust formation was much lessened.

*Hardie.*

**Epistaxis.**

COBB, F. C., Boston. (*Boston Medical and Surgical Journal*, January 4, 1900). Most commonly from anterior portion of the septum. Causes: slight ulcerations from deformities, deviations and the use of the finger nail to remove offending particles of dried mucus, fractures and



dislocations from injuries as boxing and others, new growths as angiomas and angio-sarcomata which may cause very severe hemorrhage. Constitutional conditions play an important part as plethora, anemia, syphilis, phthisis, alcohol. The author has seen severe nose bleed associated with nephritis, the disease affecting the walls of the arteries. A case is reported where severe hemorrhage from a small point on the septum, arterial in character requiring plugging was due to nephritis and was the first sign of the disease; death from nephritis followed two years afterward. A second case had blood from the posterior nares, with no sign in nose or throat to account for it. One and one-half years afterward he was dying of nephritis; hence the author argues for the careful examination of the urine in cases of severe and persistent nose bleed. When blood appears in the mouth the question as to its point of origin is a very important one and one not easily settled. A careful examination and the presence of a bleeding point in the upper air tract are necessary to eliminate the question of its deeper origin. A sharp deviation in one nostril may serve to direct the blood backward toward the pharynx and bloody scabs and crusts in the naso-pharynx are fairly good evidence of the nasal origin of the blood. The usual remedies are mentioned, much stress being laid on the necessity of a thorough and fairly satisfactory examination, which on account of the presence of blood and clots it is often difficult to get. Pledgets of cotton soaked in 5 to 10 per cent. cocain and followed by others soaked in solution of suprarenal capsule serve to stanch the bleeding and render the examination satisfactory. Chromic acid or the galvanocautery at a red heat is applied to the bleeding point. Objection is made to plugging the posterior nares with a sponge and the anterior with a half-inch or so of cotton or gauze and letting the intervening space fill with clot. Instead, the plugging should be with a single strip of narrow gauze carried in with long forceps and successive strips laid along the nose as far back as the posterior nares and from the floor of the nose up. These are allowed to remain from 24 to 48 hours and are removed with great gentleness. *Richards.*

**Case of Echinococcus Cyst of the Nose.**

RODGERS, W. K., Columbus, Ohio. (*Journal American Medical Association*, February 3, 1900.) In 1895 a fibrous polypi was removed from the naso-pharynx. It was attached to the septum. At the same time a mucous polypi was removed from the interior of the left nostril. Two years and eight months afterward a soft mass was removed from the site of the former mucous polyp in the nose. It was the size of an almond and contained echinococcus hooklets. Two years later there had been no recurrence. The patient was a woman 34 years old, in good health, and there was no evidence of the presence of interstitial parasites. *Richards.*

**Intranasal Angioma: Bleeding Polypus of the Septum.**

CASSELBERRY, W. E., Chicago. (*Journal American Med. Association*, February 3, 1900.) The author adds another case to the somewhat scanty literature of this condition and believes that the condition is more frequently met with than the cases recorded would lead one to suppose. The tumor, the size of a small bean, was attached by a rather broad pedicle to a small septal excrescence at the point of junction of the cartilaginous segment with the septal process of the superior maxilla. It was removed with the cautery snare and the base cauterized with chromic acid. After two years there had been no recurrence. The tumor was found to consist largely of blood vessels and blood spaces. *Richards.*

**A Case of Carcinoma of the Nasal Passages.**

GOODALE, J. L., Boston. (*Journal American Medical Association*, February 3, 1899.) Male, age 51, had had for 33 years, nasal polypi removed from the left nasal passage by various physicians, and of late occasionally on the left side also. Otherwise health had been good. Six months before examination a pale, red mass was found among a cluster of small polypi. The mass was the size of an almond, springing from the region of the infundibulum, of firm consistence and adherent in places both to the septum and the external nasal wall. Microscopic examination proved it to be carcinoma. Although masses were frequently removed progress was rapid and death resulted. No radical operation was deemed advisable.

From time of determining malignancy till death, a period of fifteen months elapsed. The author does not state whether he regards this as a primary carcinoma or the transformation of a benign into a malignant growth as is said to sometimes occur. *Richards.*

**Observations on the Asch Operation for Deviation of the Cartilaginous Septum.**

THORNER, Max., Cincinnati. (*Journal American Med. Association*, January, 6, 1900.) This article by the late Dr. Thorner describes with minute detail the Asch operation in all its steps and is a most valuable contribution to the literature of the subject. Dr. Thorner regards this operation as applicable to all cases of cartilaginous deviations of the septum, all of his cases but one having been entirely satisfactory in their results. Its success depends upon the carrying out of all the details and especially in completely breaking up the resiliency of the septal segments at the time of operation. *Richards.*

**Some Phases of Intranasal Surgery.**

WOOLEN, G. V., Indianapolis. (*Journal American Med. Association*, December 30, 1899.) A review of the physiology of the nose and the conditions for which intranasal surgery is justified and demanded. The author believes the chief operative measures in the nares should be for one or more of the following purposes: 1. To restore nasal respiration and relieve disease of the respiratory tract. 2. To aid the drainage of the nose and its accessory cavities. 3. To remove pressure irritation. 4. To remove local hyperesthetic tissues. 5. To render local medication possible and successful. 6. To remedy auditory diseases. 7. To remedy voice difficulties. 8. To remove malignant disease. The decision in each case must rest upon the needs of the individual patient, since not every spur needs removing nor all hypertrophied turbinates cauterizing. *Richards.*

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III.—MOUTH AND PHARYNX.

**The Treatment of Follicular and Suppurative Amygdalitis and the Angina of Scarlet Fever by the Injection of a Solution of Carbolic Acid.**

LIPES, H. JUDSON, (*New York Medical Journal*, Oct. 21, 1899.) In nineteen cases, comprising six of diphtheria,

five of scarlet fever, three of suppurative and four of simple and three of follicular amygdalitis, injections of a solution of carbolic acid varying in strength from one to four per cent. was employed. The injections were followed by no symptoms of carbolic acid intoxication nor sloughing of tonsillar tissue.

The local manifestations of the acute infectious fevers were considerably ameliorated by this method of treatment.

In the opinion of the writer many cases of acute tonsillitis can be aborted by the use of these injections.

*Seymour Oppenheimer.*

**Purpura of the Buccal Mucous Membrane from the Injection of Iodin.**

WILLIAN, (*Presse Méd.*, Sept. 30, 1899.) A woman, 43 years of age, after taking six grams of iodid of potassium daily for six days, was affected with ordinary symptoms of iodism and also with a burning sensation at the vault of the palate, the exudation of a pink fluid and an extensive ecchymosis on the mucous membrane. The symptoms disappeared with the omission of the medicine, and reappeared when it was again administered.

*Goodale.*

**Ulceration of the Pillars of the Velum in Typhoid Fever.**

SCHAEFER, (*Gaz. hebdom. de méd et de chir.* Sept. 3, 1899.) The anterior pillars are especially exposed to the action of the typhoid bacillus, either directly or through its toxins which tend to cause necrosis. This action is aided by compression from the tongue, by the dryness of the mouth, and by the relative immobility of the pillars. The progress of the ulceration is favored by the ordinary bacteria of the mouth.

*Goodale.*

**A Contribution to the Therapeutic Value of Gargling.**

TOTH, (*Pester Med. Chir. Presse No. 35.* 1899.) A soldier, in order to escape punishment for some offense, took a caustic fluid of undetermined nature into his mouth with the intention of swallowing it, but at the commencement of the act of deglutition spat the fluid out again. Examination showed corrosion of the soft palate, pillars, and uvula, while the tonsils and posterior pharyngeal wall remained unaffected. The author assumes that

the course of the fluid was similar to that occurring in the act of gargling. In a later number (No. 36), KRAMOLIN questions the correctness of this supposition and discusses the nature of the act of gargling and of swallowing. A final reply by TOTH appears in No. 40 of the same journal in which he reiterates his statement that gargling is nothing more than a washing out of the mouth, in which the tonsils take part only in so far as they contribute to the formation of the isthmus faucium, and that a fluid, in order to reach the pharynx, must be swallowed.

*Goodale.*

**An Epidemic of Streptococcus Angina, with Lesions of Herpetic Character in the Majority of Cases.**

LE DAMANY, (*Gaz. des Hopitaux*, Sept. 21, 1899.) The city of Rennes was visited during December, 1898, and the first six months of 1899, with an epidemic of acute angina, characterized by severe transitory, general symptoms, and by the eruption of herpetic vesicles upon the tonsils and soft palate, associated frequently with cutaneous herpes, generally of the lips. The epidemic nature was extremely marked. In schools and garrisons the number of individuals affected ranged from five to twenty per cent. One case terminated fatally in a general streptococcus septicemia. In two children, the only clinical symptoms were fever and cervical adenitis. Coryza, laryngitis and bronchitis were rarely found and, if present, always secondary. Disturbances of the nervous system were invariably absent. The bacillus of Pfeiffer was not found in any instance, but a streptococcus was always present, frequently in pure culture.

*Goodale.*

**Acute Suppurative Processes in the Faucial Tonsils.**

J. L. GOODALE. (*N. Y. Med. Journal* Oct. 7, 1899.) Goodale has made a study of eight cases of acute amygdalitis, characterized by the presence of intra-follicular abscesses, occurring as complications of the usual proliferative changes, with a hope that some light might be thrown upon—

1. The etiologic relationship of these intrafollicular abscesses to special micro-organism.
2. Their relationship to peritonsillar inflammation.
3. Their prognostic significance and the possibility of recognizing their presence from chemical appearances,

The phenomena of the eight cases may be summarized thus:

1. In cases with numerous intrafollicular foci of suppuration, the streptococcus pyogenes were found to be more abundant than forms of staphylococci.

2. The intratonsillar abscesses were found in two cases, with, and in six cases without, circumtonsillar inflammation.

3. The cases presented clinically a severe infection, as shown by the fever, constitutional disturbance, joint pains and acute cervical lymphadenitis.

They unquestionably showed, as a whole, more disturbance than was present in twenty cases of simple proliferative amygdalitis observed by the writer.

4. The tonsils in most cases presented no clinical appearance that would enable one to determine the presence of the intrafollicular abscess. In a few cases subepithelial white spots were seen, which were conjectured to be abscesses situated immediately beneath the epithelium of the exposed surface.

5. Histologic phenomena:

1. The suppurative foci were few in some tonsils and numerous in others. They varied often in size in the same specimen, being in some follicles small and barely recognizable, in others occupying most of the interior of the follicle, while in still others the abscesses were seen to have already broken through the lymphoid ring and to have discharged their contents into the adjacent crypts.

2. The amount of fibrinous exudate in the crypts was more marked in these cases than generally exists in simple proliferative amygdalitis.

3. In the six cases not attended by circumtonsillar inflammation, the intrafollicular lymph channels and connective tissue spaces near the base of the tonsil contained few or no polynuclear neutrophils. On the other hand, in the two cases accompanied by peritonsillar inflammation, the connective tissue spaces and adjoining reticulum were crowded with polynuclear neutrophils, and in one of these cases these cells were seen to extend in direct continuity from an abscess situated in the interior of the tonsil toward the base of the organ.

The author says the number of cases thus far observed is too small to justify definite conclusions regarding their etiology or significance. Nevertheless, the following hypotheses suggest themselves as possessing a reasonable degree of probability.

1. The pyogenic infection of the follicles is probably secondary to a previous infection of the crypts by the streptococcus pyogenes. This assumption is based upon the results of the cultures, upon the different ages of the abscesses as observed in the same tonsil, and also upon the fact that a marked proliferative inflammation may exist for several days and the tonsil show on excision only a few incipient abscesses. If the follicular infection were of embolic origin, we should expect the abscesses to be more nearly alike in size and to antedate the proliferative inflammation.

2. In the two cases accompanied by circumtonsillar inflammation, this complication may have been due to the discharge observed of an abscess into the efferent lymph channel.

*Seymour Oppenheimer.*

#### **Recurrence of the Tonsil After Excision.**

F. E. HOPKINS, (*N. Y. Med. Journal*, Dec. 2, 1899.) The recurrence of the tonsil after operation in a case of the writer's led him to search the literature on the subject. The more recent treatises and current articles make less reference to the frequency or possibility of recurrence than the older works. The author assumes this to indicate that better and more skillful operative technique has resulted in a decrease in the return of this lymphoid mass.

Imperfect operation and constitutional dyscrasia tend to more frequent recurrence after operative measures have been employed.

*Seymour Oppenheimer.*

#### **Several Cases of Tonsillar Hypertrophy.**

LABBE and LEVI-SIRUGUE, (*Gazette Hebdomaire*, 1899, No. 92.) In a histological study of hypertrophied tonsils, the authors found an increase in the size of the follicles, with a marked development of the germinal centers, together with heightened karyokinesis. The epithelium of the surface and especially of the crypts showed marked signs of irritation. The connective tissue was conspicuous, but



there was no true sclerosis. Such tonsils differ from normal ones by a functional exaggeration. *Goodale.*

**Digestive Disorders in their Connection with the Rhino-Pharyngitis and Chronic Tonsillitis of Children.**

AVIRAGNET, (*Gazette Hebdomaire*, 1899, No. 94.) In four children affected by more or less marked digestive disturbances (fetid diarrhoea, gastro-enteritis, and membranous ulcerative enteritis,) examination showed the co-existence of rhino-pharyngitis and chronic tonsillitis. The digestive symptoms, after resisting all the ordinary methods of treatment, disappeared promptly upon the cure of the nasopharyngeal catarrh by appropriate measures. These facts would seem to show that in such cases, the digestive troubles were due to direct poisoning by the products of the nasopharyngeal secretions. *Goodale.*

**Diphtheroid Stomatitis of the Newborn.**

BRINDEAU, (*Gazette Hebdomaire*, 1899, No. 96.) This affection, otherwise variously known as Valleix's aphtha, Bednar's aphtha and Parrot's pterygoid plaques, consist in the presence of small ulcerations, at the level of the buccal mucous membrane covered with grayish white false membrane. Their usual seat is on the palate, at the level of the pteryoid apophyses, but they may be found in other situations, as in the median line of the palate, or the frenum of the lower lip. Their origin is still under discussion. In four cases, the author found the staphylococcus three times and the streptococcus once. In one infant, the affection was the starting point for a fatal erysipelas, in another child, where it continued to nurse, a secondary streptococcal infection of the lacteal ducts was produced in the mother. *Goodale.*

**A Case of Ludwig's Angina.**

MARCHESE DE LUNA, (*Gazette des hôpitaux*, 1899, No. 144.) A man, thirty-nine years of age, in good previous health, and of good habits was taken with a moderately firm, painful swelling of the right sub-maxillary region, immediately below a carious molar tooth. Two days later, swallowing became painful, movements of the tongue difficult and the breath fetid. Salivation and marked thirst were present. The tooth was extracted but the symptoms increased in intensity, the temperature reaching 39° and

the sublingual region so swollen as to prevent separation of the jaws. Four days later, the local conditions persisting, an incision was made in the subhyoid region evacuating fetid pus. After a period of relief, symptoms of general toxemia supervened with death in three days.

*Goodale.*

**Lesions of the Tonsils in Some Cases of Tuberculosis.**

LABBE and LEVI-SURUGUE, (*Gazette hebdomaire*, 1899, No. 92.) Tuberculosis of the tonsils is more common than is generally supposed. It is more frequent in adults than in children, owing to the absence of expectoration in the latter. The tubercle bacillus is usually brought to the tonsils by the sputum in the course of pulmonary tuberculosis; less frequently by an ascending infection of the lymphatic glands of the neck, or by the blood vessels in the course of miliary tuberculosis.

All the forms of tubercular lesions may be found in the tonsils: ulceration, typical tubercular nodules with caseous or sclerotic changes, and diffuse infiltration. Bacilli are especially numerous in this last form.

The tonsils affected by the tubercular process may present more or less advanced cellular changes or a sclerosis, which is at times very marked. This last may be due to ordinary secondary infections, but it may also arise from the action of the tubercular toxin or represent the remains of a healed tubercular process.

*Goodale.*

**Fibro-Lipomatous Tumor of the Epiglottis and Pharynx.**

INGALS, E. FLETCHER, (*N. Y. Med. Journal*, Dec. 9, 1899.) A report of a case of a tumor of large dimensions attached to upper part of the right side of the epiglottis, to the right pharynx-epiglottic fold, to a part of the base of the tongue, to the right side of the pharynx. The growth was removed at different sittings under cocaine anesthesia by means of the cold snare and cutting forceps and supplemented by the use of the galvano-cautery.

Microscopical examination of the different portions showed in certain sections fibrous tissue, in others mixed fibro-lipomatous characteristics and in other parts true lipomatous tissue.

Examination some months later failed to show any evidence of recurrence.

*Seymour Oppenheimer.*

**A Report of Two Cases of Accessory Thyroid Gland at the Base of the Tongue.**

WATSON, ARTHUR W. (*New York Medical Journal*, Oct. 21, 1899.) *Case 1:* Woman, age 50, complaining of great dyspnea and difficulty in swallowing dating for a period of several years. Inspection showed a rounded tumor rising behind the arch of tongue, extending from the epiglottis to the circumvallate papillae. Surface of growth was slightly ulcerated.

*Case 2:* Girl, age 16, complained of difficulty in swallowing for five years past. Examination showed growth identical in position and appearance to that of Case No. 1, excepting that no ulceration was present. Both cases were operated under cocaine anesthesia by means of the electro-cautery snare. Microscopical examination revealed a meshwork of acini, dilated and cystic, and filled with a colloid material.

Lining the acini were bands of epithelial cells, considerably flattened by pressure. The stroma was made up chiefly of fibrous tissue, and numerous well-formed blood vessels traversing it throughout.

This condition of accessory thyroid enlargement is evidently quite rare, but little mention being made of it in the text books.

Tumors in this position are developed from a persistent upper part of the thyroglossal duct, which is formed in the development of the thyroid gland, and opens at the base of the tongue at the position of the foramen caecum. The thyroglossal duct is usually obliterated after the eighth week of fetal life, but may persist, in whole or in part, throughout life.

*Seymour Oppenheimer.*

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IV.—LARYNX.

**Pemphigus Chronicus Vulgaris of the Larynx and Mouth.**

BRYAN, J. H. (*New York Medical Journal*, November 25, 1899.) This rare condition occurred in a woman (age is not stated), who consulted the writer in October, 1898, complaining of a peculiar sensation as of a foreign substance in the larynx for some months. Nasal and pharyngeal tissues were normal. A white membranous deposit

was present about a quarter of an inch in diameter on the laryngeal surface of the epiglottis. Detachment of the membrane revealed a red surface beneath, but no loss of substance. Examination of this tissue showed a fibrinous deposit containing numerous round cells but no epithelium; staining showed a large number of cocci, but no bacilli. At frequent periods after the original examination, numerous other portions of the epiglottis became the seat of membranous deposits, which, after detachment, the membrane below would rapidly heal. During one of these outbreaks a similar deposit was noticed upon the gums. No cutaneous lesion was at any time present.

This condition is rarely found primarily on mucous surfaces, but follows secondary to a cutaneous manifestations. The employment of arsenic in the form of Fowler's solution is recommended by the author. Local applications have no avail. *Seymour Oppenheimer.*

**Abscess of the Anterior Surface of the Epiglottis.**

HOWE, ALEXANDER C. (*New York Medical Journal*, October 28, 1899.) A man, aged twenty-four, complained of laryngeal tenderness, increasing dyspnea and dysphagia of three days' duration. Inspiration was more difficult than expiration.

Examination showed the epiglottis to be impinged upon the laryngeal opening by a tumor half an inch in diameter springing from the anterior middle portion of the epiglottis. Incision was followed by a discharge of bad smelling pus and the subsidence of all symptoms. Although necrosis of the cartilage was present no perforation of this structure resulted. *Seymour Oppenheimer.*

**Angiosarcoma Linguae et Epiglottidis.**

This case, the second one on record, presented nine years ago, at the age of 25, a growth at the base of the tongue appearing as a smooth, dark-red, movable, hard mass of nearly the size of a pullet's egg, which caused the patient but slight discomfort. One year later the mass was seen to be larger, nearly filling the pharyngeal space, and to have involved nearly two-thirds of the epiglottis. Removal was accomplished with the galvano-cautery snare. Examination eight years later showed no recurrence. *Goodale.*

**The Laryngeal Crises of Tabes in Their Relation to Other Visceral Tabetic Crises.**

TOUCHE. (*Presse Med.*, August 30, 1899.) Among forty cases of tabes, twelve showed laryngeal symptoms and of these latter, eleven manifested also other visceral crises. All degrees of intensity were observed, from a case where laryngeal suffocation terminated fatally to others where the crisis was disclosed only by paroxysms of coughing, resembling those of whooping cough. Gastric crises were most frequently associated, often with rectal and diarrheal crises. *Goodale.*

**Treatment of the Dysphagia of Laryngeal Tuberculosis by Means of a Product of Microbe Culture.**

LAVRAND. (*Revue hebdom. de laryngologie, etc.*, 1899, No. 30.) The new remedy is prepared from an extract of a culture of Koch's bacillus made by Dr. Bourgois of Tourcoing, but the latter is not yet ready to publish his methods and experiments. Lavrand has used the product in a number of cases of severe laryngeal tuberculosis and reports uniformly good results. It is claimed that the extract, usually given three times a day in 5 drop doses in water, is innocuous.

Lavrand reports that he has invariably noticed a marked amelioration of the dysphagia and spontaneous pain even in the cases in which the disease was most advanced. Five cases are reported and the histories appear to confirm the conclusions of the writer. He claims for it not only an analgesic effect but that it exerts a favorable action upon the tubercular ulcerations as well.

*Hardie.*

**Stereoscopic Photography of the Larynx.**

GARES. (*Revue hebdom. de laryngologie*, 1899, No. 27.) The article comprises a brief historical review of the subject, in which full credit is given to French of Brooklyn, together with a description of the writer's instruments and method. The (two) plates which accompany the article show in a beautiful way the excellence which may be attained in laryngeal photography.

*Hardie.*

**A Case of Hysterical Larynx.**

HOPKINS, F. E. (*N. Y. Medical Journal*, December 2, 1899.) A young girl of fifteen years, who, during conva-

lescence from an attack of pertussis developed a high pitched piercing sound caused by strong inspiration with the vocal cords tense.

The paroxysm was preceded by a sense of irritation to the throat and slight cough. Subsequently the squealing sound became expiratory as well as inspiratory and in spite of all kinds of treatment, resisted for several months. The insertion of an intubation tube, which was retained for but an hour, brought the manifestations to an abrupt termination.

*Seymour Oppenheimer.*

**Report of an Interesting Case of Dyspnea in an Adult.**

JOHNSON, WALTER B. (*Laryngoscope*, July, 1899.) Patient, aet 26, anemic in the sixth month of pregnancy, developed an attack of "grippe" and almost complete aphonia.

On the tenth day of the illness, following the non-observance of the attendant's directions, the patient left the bed, which was followed by cyanosis, cough, chill, etc., the dyspnea being so marked that asphyxia seemed unavoidable.

The paroxysms of cough resulted in expectoration of large quantities of mucous and blood which temporarily relieved the dyspnea but which recurred with the same severity. Laryngoscopic examination showed marked turgescence of the larynx, the epiglottis thickened and congested. The vocal cords and tracheal mucous membrane could not be seen. The introduction of an adult O'Dwyer tube became a necessity.

It relieved the dyspnea but excited paroxysms of cough, the patient expectorating large quantities of mucous and blood and also a piece of a dark colored material about the size of a large pea.

About ten minutes after the introduction of the tube it was coughed up, but the patient continued to remain comfortable. Large pieces of hard membranous material were expectorated. Laryngeal examination revealed redness and swelling of the larynx extending to the trachea.

During the examination a piece of membrane attached to the larynx was observed to fall into the subglottic space.

This was coughed up and appears to have been a membranous deposit. Microscopic examination failed to show the Klebs-Loeffler bacillus. *Seymour Oppenheimer.*

**Remarks on Clinical Diagnosis and Treatment of Diphtheria.**

SHEFFIELD, HERMAN B. (*N. Y. Medical Journal*, December 30, 1899.) Sheffield mentions the differential points of diagnosis between pharyngeal diphtheria and the various forms of tonsillar inflammation.

In the pharyngeal type of the disease, antitoxin is not employed by the writer, but recently he has used it in the laryngeal form, in which his results have been good.

The value of bacteriologic examination as a means of establishing the positive diagnosis as well as the use of antitoxin is belittled. *Seymour Oppenheimer.*

**Some Points in the Diagnosis and Treatment of Laryngeal Tuberculosis.**

DONNELAN, P. S., Philadelphia. (*Philadelphia Monthly Medical Journal*, November, 1899.) An early diagnosis is essential if treatment is to be of much avail. A suitable climate is a great aid, and in the absence of it as much out door air as possible should be obtained. The usual medical agents are recommended. The author regards the subcutaneous or intravenous injection of cinchonic acid as promising considerable and quotes Landerer's statistics of 110 cases of pulmonary and laryngeal tuberculosis treated by this method, with 57 cures and 29 improvements. "Intravenous injections were given as many as fifty times, at the same spot in the same vein, without giving rise to any irritation. The injections produce a general leucocytosis and an aseptic inflammatory product which leads to encapsulation of the tuberculous nodules." A 1 per cent. to 5 per cent. solution of sodium cinnamate in water is used every third or fourth day. Locally lactic acid preceded by cocain is recommended as doing more good than any other topical application. Curettement is opposed. *Richards.*



## MISCELLANEOUS.

**Unilateral Emphysema of the Fronto-Orbital Region Caused by Blowing the Nose.**

JONCHERAY. (*Revue Hebdom de Laryngologie, etc.*, 1899, No 26.) The patient, aged 15, had been accustomed to use his handkerchief frequently and forcibly before the accident occurred. Temporary loss of vision accompanied the emphysema, which affected the eyelids, the upper to a greater extent.

The writer inserted a probe into what he believed to be the frontal sinus, and removed a polypus from the middle meatus. The boy was well in ten days. Joncheray supposes that there was a congenital defect in the inferior orbital plate.

Hardie.

**The Falling of Adenoid Vegetations Into the Larynx.**

BAR. (*Revue Hebdomadaire de Laryngologie, etc.*, 1899, No 21.) Bar reports the case of a child five years old who was operated upon in the upright position under Ethyl bromid anesthesia, Gottstein's curette being used. The adenoid mass fell into the larynx, and only its prompt removal by means of the finger saved the child's life.

Bar prefers forceps to the curette to prevent the possibility of this accident. He considers the Rose position of the patient unsuited to Ethyl bromid anesthesia but the abstractor agrees with Winslow, (*Journal Eye, Ear and Throat Disease*, Oct. 1899,) in favoring it.

Hardie.

**Tertiary Nasal Syphilis.**

DE CHAMPEAUX. (*Revue Hebdom de Laryngologie*, 1899, No. 26.) The patient, a woman 75 years old, with nasal polypi. Syphilis was not suspected until after the removal of a number of the mucous polypi a perforation of the septum was made out. De Champeaux prescribed inunctions of 2 grams. of mercurial ointment with 1 gram. potassium iodide internally daily with boric acid irrigations. The inunctions were to be continued for 10 days, omitted for 5 days, then begun again. In a little more than two weeks a marvellous improvement had taken place. The fibrous polypi which were being reserved for removal by the galvano-cautery had completely disappeared. The mucous polypi recurred however, and required frequent removal,

and the observation is recorded to show the different effect of specific treatment upon the two varieties of growth.

*Hardie.*

**On Edema of the Nasal Mucous Membrane and Edematous Occlusion of the Nasal Passages.**

GRADLE, H. (*Laryngoscope*, July, 1899.) The nasal mucous membrane sometimes becomes edematous, causing obstruction of the nasal passages. The edema differs from that observed in the skin in immediately resuming its original contour after discontinuing the pressure with the probe. In its general characteristics it behaves rather like the edema of the skin in a condition of inflammatory edema, rather than a passive dropsical effusion without adjoining inflammation.

The author under these circumstances has noticed two peculiar signs: 1. While manipulating with the probe, the view of the nasal orifice became momentarily obscured by the formation of a fog or cloud caused by the expulsion of fine streams of fluid from the orifices of the dropsical glands of the mucous membrane in consequence of the irritation by the probe. 2. The patient experienced a sensation as if a foreign body was lodged in the nostril. The tendency to keep on blowing the nose continued even after the mucous surface had been entirely cleared of adherent mucus.

*Seymour Oppenheimer.*

**Confined Suppuration of the Frontal Sinus with Spontaneous Rupture.**

KYLE, D. BRADEN. (*New York Med. Journal*, Dec. 16, 1899.) Kyle reports a case of a woman, aged 60, who a few months following an attack of epidemic influenza, developed a sensation of fullness on the left side of the nose, opposite the inner angle of the orbit, with a profuse discharge of thin, watery secretion from the nose. There was considerable tenderness and swelling between the eyes over the nose.

No discharge could be elicited from the accessory cavities and transillumination gave a negative result. On the removal of some slight crust formation upon the skin over the supra-orbital ridge, a discharge of thick foul-smelling pus took place.

Examination with a probe revealed a mass of necrotic tissue, external spontaneous rupture having taken place.

Irrigation with a warm alkaline solution followed by hydrogen peroxide and saturated solution of boric acid and packing with aristol gauze, resulted in the exfoliation of the necrotic area and the filling up of the frontal sinus with healthy granulation tissue, bringing about a complete cure.

The writer reviews the literature of confined suppuration of the frontal sinus, ending with spontaneous rupture.

*Seymour Oppenheimer.*

#### **Rhinedema.**

CURTIS, H. HOLBROOK. (*New York Med. Journal*, Dec. 16, 1899.) Curtis fails to find mention of nasal dropsy or edema in text books upon the nose or throat.

He has observed in several cases, particularly in patients of a neurotic type, with sedentary habits, decided edema of the intra-nasal tissues. Differentiation must be made between this condition and true hyperplasia.

Many cases of winter hay fever, the writer believes to be of this nature.

He cautions against the use of the galvano-cautery in the treatment of the early stages of this affection, as liable to produce extensive sloughing. The use of the rectal Sitz douche, washing out the colon with sea salt and sodium bicarbonate is one of the best measures for relieving venous stasis.

Systematic gymnastic exercise, brisk walks in the open air, and hydropathic treatment are of great benefit, coupled with the internal administration of digitalis and strychnine. The term rhinedema is used not to designate a disease, but rather to illustrate a distinct intra-nasal condition.

*Seymour Oppenheimer.*

#### **Removal of a Foreign Body From the Bronchial Tube Through the Tracheal Opening.**

COOLIDGE, A. (*New York Medical Journal*, September 30, 1899.) A case of a man, 23 years of age, who had worn a tracheotomy tube for twenty years on account of a laryngeal stenosis.

A few hours before application for admission to the hospital the tracheal tube had become detached and inhaled causing severe coughing and difficult respiration. The employment of the X ray was negative. Under ether

anesthesia the tracheal opening was enlarged downward, the head and shoulders of the patient being held well over the end of the table and downward. A urethroscope was introduced downward within an inch of the bifurcation of the trachea. The foreign body was readily seen in the right bronchus, a short distance below the bifurcation. A long pair of alligator forceps inserted through the speculum grasped and removed the tube without any difficulty. The patient made an uneventful recovery.

The writer concludes that immediate tracheotomy and exploration by means of straight tubes with good illumination is the safest course to pursue. Violent respiration should be avoided, therefore tracheotomy under cocain is preferable to a general anesthetic. The danger of septic pneumonia necessitates the strictest surgical cleanliness.

*Seymour Oppenheimer.*

**Exhibition of a Case of Stammering with Demonstration of the Method Employed in Treatment.**

MAKUEN, G. HUDSON. (*New York Medical Journal*, September 23, 1899). A case of a young man, age, 29, presenting no history of stammering ancestors, in whom this condition began with the inception of the development of speech.

The defect manifested itself by spasmodic contractions of variable frequency and duration of the muscles of the soft palate and tongue resulting in sudden closure during vocalization and articulation, of the posterior palato-lingual chink.

The speech was of a jerky hesitating character, the patient not having control over the respiratory functions during the production of voice.

The treatment consisted in the teaching of the patient to exercise the levator and depressor thoracic muscles in order to overcome the respiratory impediment. Then to combine this mechanism with the vocal mechanism in the production of elementary sounds and syllables, which by persistent practice resulted in an effective manner of speech.

*Seymour Oppenheimer.*

**Some Remarks on the Use of the Suprarenal Capsule in the Nose and Throat.**

SHARP, J. CLARENCE, (*New York Medical Journal*, Aug.

12, 1899). A year's trial of the suprarenal extract in diseases of the nose, pharynx and larynx has convinced the author of its great value in the making of examinations and of its wonderfully astringent and hemostatic properties.

*Seymour Oppenheimer.*

**A Clinical Note on the Connection Between Asthma and Eczema.**

TAYLOR, H. NEVILLE, (*New York Medical Journal*, Oct. 21, 1899). A case of a boy eight years of age showing a direct connection between attacks of asthma, and an associated dermatitis.

*Seymour Oppenheimer.*

**A Remarkable Case.**

BIRD, J. W. (*The Laryngoscope*, Oct., 1899.) A case of a man, running across the yard in the dark, ran into a wire clothes line, which caught in his teeth. The force was so great that it pulled away almost the entire left superior maxillary bone, fracturing the antrum of Highmore.

(The article is very brief and makes no mention of the exact condition of the injured parts.

The author says, however, "that no perceptible scar or deformity resulted," which seems almost incredible.)

*Seymour Oppenheimer.*

**Report of a Case in which Defective Speech Results in Some Interesting Derangements of Cerebral Function.**

MAKUEN, G. HUDSON, Philadelphia. (*Philadelphia Med. Journal*, December 16, 1899.) Dr. Makuen cites a case of a boy fifteen years old with defective speech and limited and faulty movements of the tongue and lips. His speech was very much mutilated and his writing on a par with his speech. Under training the improvement was very great and it is expected that eventually there will be no trace of any defect physical or mental. Dr. Makuen's successes in this and other cases of speech defect show the value of intelligent training in a class of cases often thought to be doomed to life of complete or partial idiocy. *Richards.*

**Electricity in Diseases of Nose, Throat and Ear.**

SCHEPPEGRELL, WM., New Orleans. (*Journal American Medical Association*, February 3, 1900.) A plea for the more thorough study of electro-therapeutics and its application in diseases of the nose, throat and ear. Thus

far electricity has been used by the specialists in this department either as a cauterizing agent or to run mechanical devices. The author thinks it has a much wider range and that galvanism and faradism have many therapeutic indications. He speaks of 'galvanism as useful in atrophic conditions for its stimulating effect and also in other pathologic conditions by reason of its tonic effect on the vasomotor nerves. *Richards.*

**A Few Remarks on Therapeutic Efficacy in Heroin.**

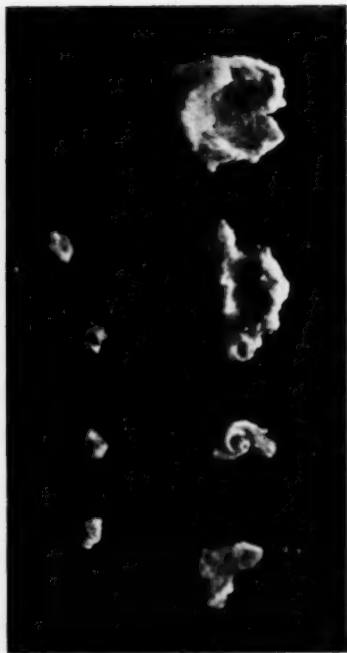
EINHORN, MAX, New York. (*Philadelphia Medical Journal*, October 28, 1899.) Heroin is a morphin compound the sedative effect of which on the respiration is more pronounced than that of morphin or codein. It is insoluble in water but the hydrochlorid is soluble and the properties of the two are identical: dose  $\frac{1}{20}$  gr. While it chiefly allays cough it has valuable analgesic properties in various painful affections; there are no unpleasant symptoms except slight dizziness and occasional dryness of the throat. *Richards.*

**Sanitaria in the Treatment of Tuberculosis.**

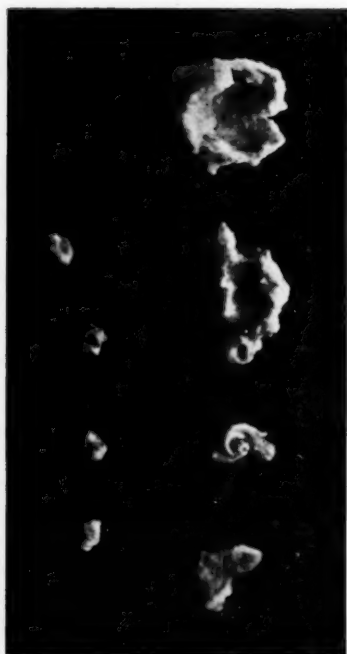
BOWDITCH, VINCENT Y., Boston. (*Medical News*, October 7, 1899.) Bowditch reviews the history of sanitarium and pleads for their general establishment near large towns. He describes the Massachusetts State Hospital for consumptives, the first to be built in the U. S. by the state. It is at an altitude of 1200 feet. The method of treatment is essentially open air living, open windows even in cold weather being insisted upon, moderate exercise, good food and hygiene while specific medicinal treatment is disregarded. The same methods are in vogue at the private Sharon Sanitarium for women, near Boston at an altitude of 350 feet. Both of these sanitarium are for cases susceptible of betterment. 30 per cent. of the "Sharon" cases have been discharged as "arrested" and of these many have remained well over the five years covered by the observations. The author urges the building of such sanitarium near all our large cities, in properly selected sites and thinks if this could be done much would be accomplished toward diminishing the scourge of tuberculosis. *Richards.*







Dr. Harold Wilson's Case of Necrosis and Sequestrum of the Petrous Portion of the Temporal Bone.—Fragments of the sequestrum consisting of the labyrinthine portion of the temporal bone. An opening into one of the semi-circular canals, probably the horizontal, and the cochlea, are plainly to be seen.



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